

User guide for the DreamPanel HDMI Media System



1. HDMI Software Manager

1.1. Compatibility

HDMI Software Manager is compatible with the following Operating Systems:

- Windows XP
- Windows 7 - 32 bits
- Windows 7 - 64 bits

Note: the HDMI Software Manager may be compatible with other Windows versions, but only the above versions have been tested and validated.

1.2. Installation

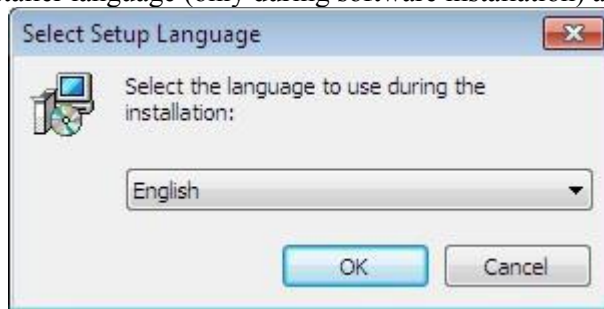
1.2.1. Application installation

The Software Manager application is automatically installed using the “HDMI_Software_Manager_VX.Y.Z.exe” binary file, where X, Y and Z are Major, Minor and Patch version numbers.

All required files of the HDMI Software Manager allowing to control the HDMI Media System through Ethernet or USB links are installed through this installer.

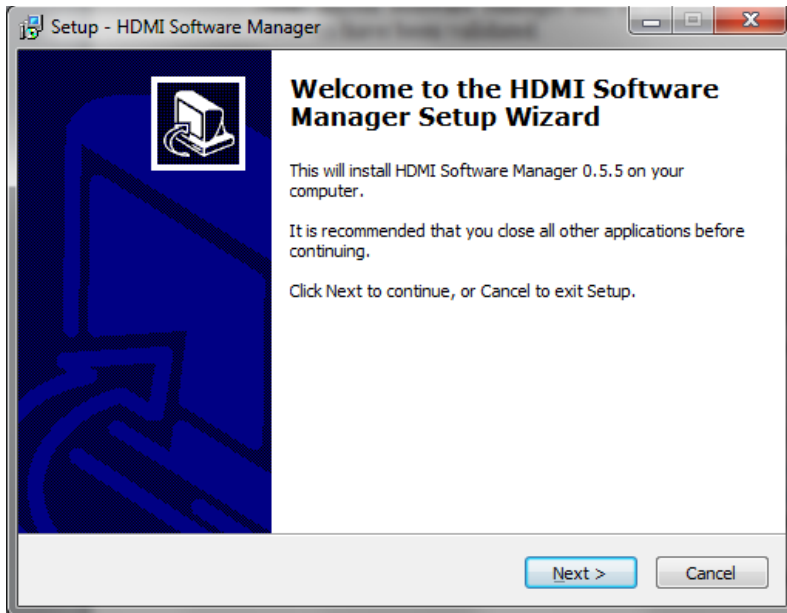
Follow instructions below:

- Double click on the “HDMI_Software_Manager_VX.Y.Z.exe” binary file,
- Select the installer language (only during software installation) and click on “OK”,

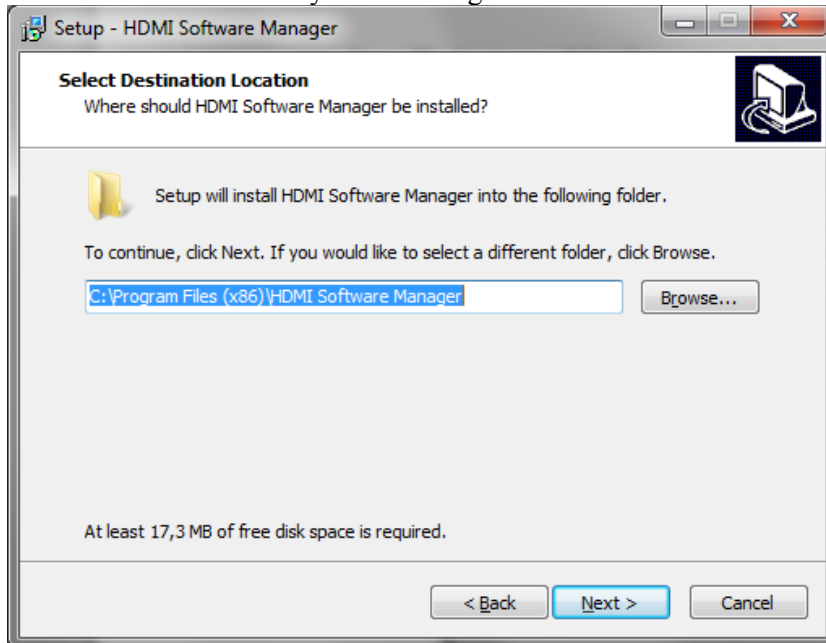


Note: The language of this first screen is the same as the Windows OS language.

- The second screen gives software descriptions and recommendations. Click on “next” button.



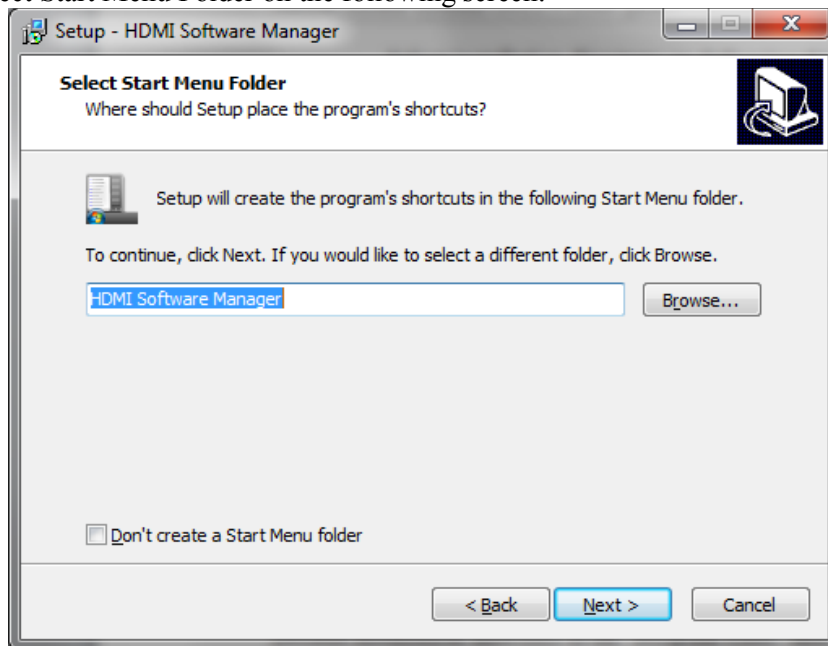
- Select the installation directory on following third screen:



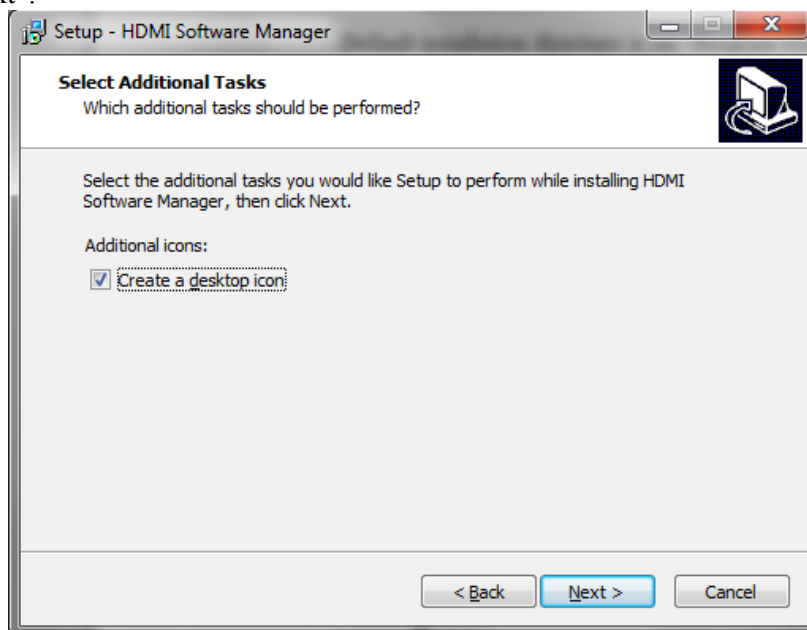
Default installation directory is on “Program Files” and depends on Windows OS version:

- o “C:\Program Files (x86)\HDMI Software Manager” on Windows 7 64 bits
- o “C:\Program Files\HDMI Software Manager” on Windows XP

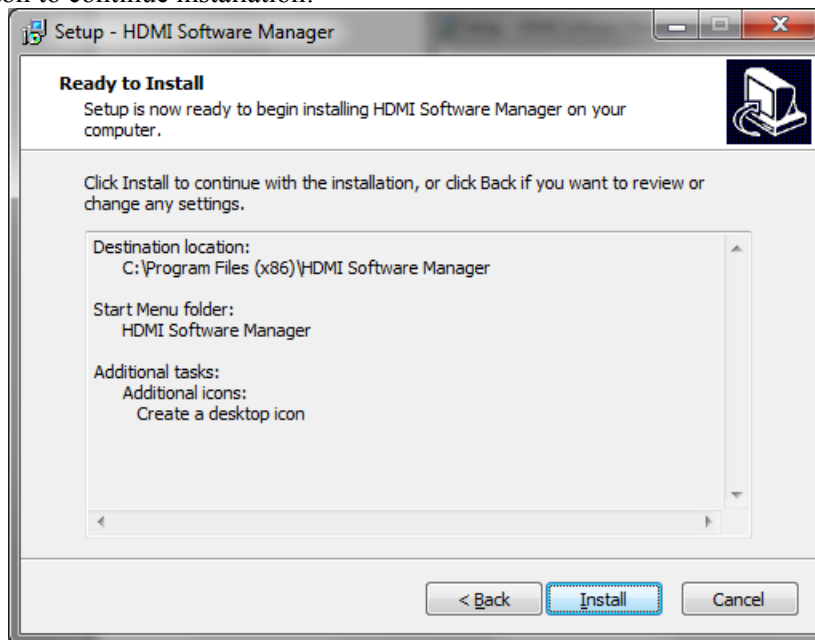
- Select Start Menu Folder on the following screen:



- Check the "create a desktop icon" field if you want to create a desktop icon, then click on "next":



- This last screen before installation summarizes details of installation. Click on “Install” button to continue installation:



- Wait until the end of the installation indicated by following screen. Check the “Launch HDMI Software Manager” field to start application immediately and click on “Finish” button.



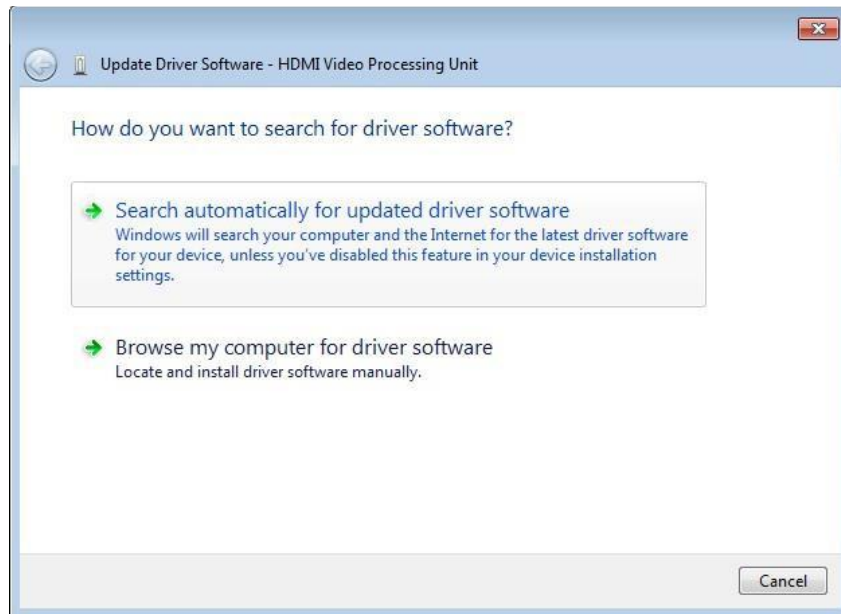
4.2.1. USB driver installation

Control of the VPU through USB requires installation of a specific driver. Required driver files are located in the “*HDMI_Software_Manager_Install_Directory*\Driver” directory.

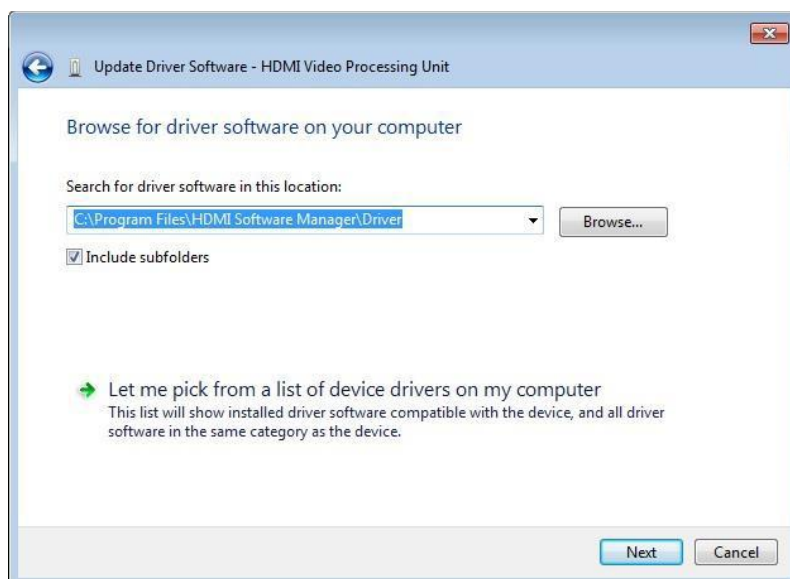
This driver must be installed the first time the VPU board is connected to the PC through USB link and for each USB port of the PC.

Follow the following instructions:

- Connect the VPU to the PC through USB and let Windows search for known drivers.
- If driver is uninstalled, select “Browse my computer for driver software” on the following window:



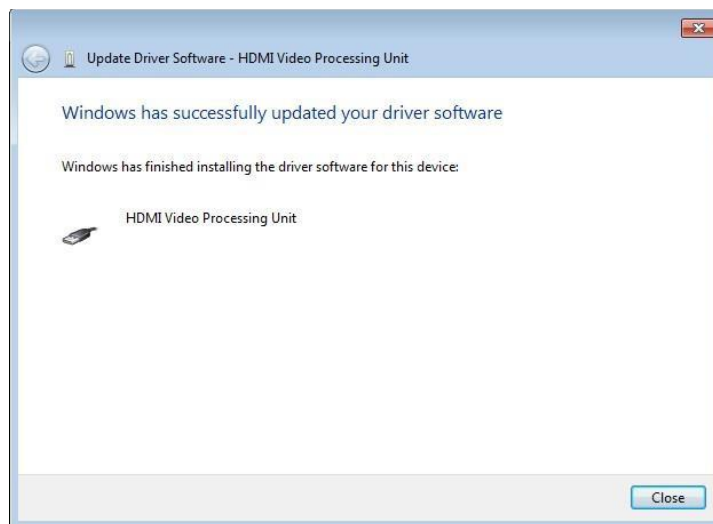
- Select “*HDMI_Software_Manager_Install_Directory*\Driver” directory, check the “Include subfolders” field and click on the “Next” button:



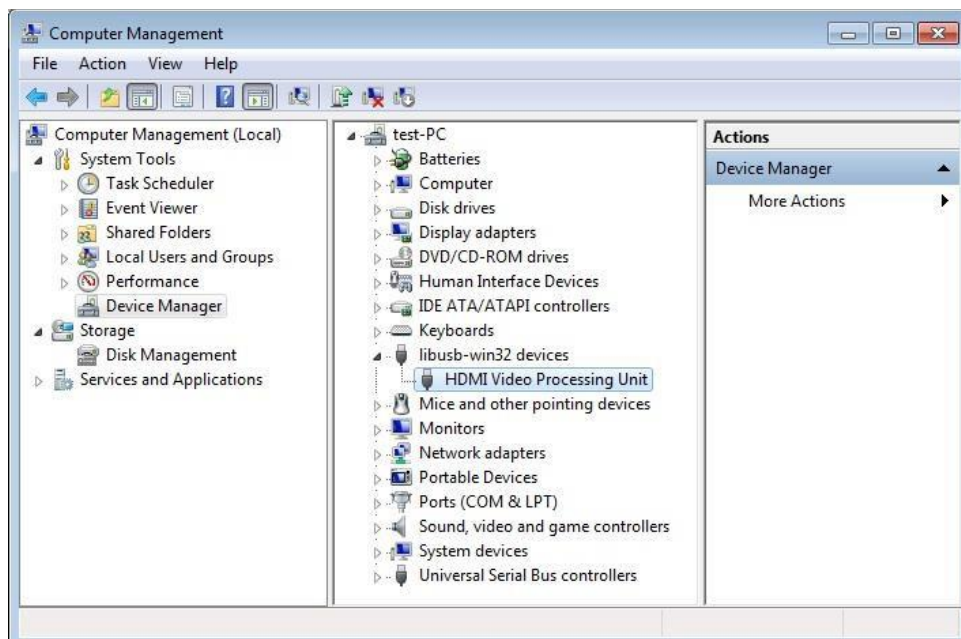
- Ignore the Windows security alert by clicking on “Install this driver software anyway”:



- Wait until the end of installation identified by following window:



- In Computer Management window you can verify that the driver is correctly installed: the HDMI VPU device should appear in the list like in the following window:



1.3. Uninstallation

Uninstallation of “HDMI Software Manager” must be done through the Windows uninstaller:

- Either through the “Program and Features” control panel window,
- Or through the “Uninstall HDMI Software Manager” item in “All Programs > HDMI Software Manager” Windows start menu.

1.4. Start-up of the HDMI Software Manager

1.4.1. Launch application

The HDMI Software Manager can be started using one of the following options:

- The following desktop icon: 
- The quick launch icon,
- The “HDMI Software Manager” item in “All Programs > HDMI Software Manager” Windows start menu.
- The “HDMI_Software_Manager.exe” file in “*HDMI_Software_Manager_Install_Directory*”

1.4.2. Welcome page / Language selection

The welcome page is the first page displayed when « HDMI Software Manager » starts. It displays image and text.

The user selects the software language by clicking on the icon flag button of the country. Available languages are:

- “English”
- “Chinese”
- “French”
- “Spanish”

After the language selection, the “System Selection” page is displayed.

1.4.3. System and mode selection page

VPU control links available
(Ethernet and USB if
detected)

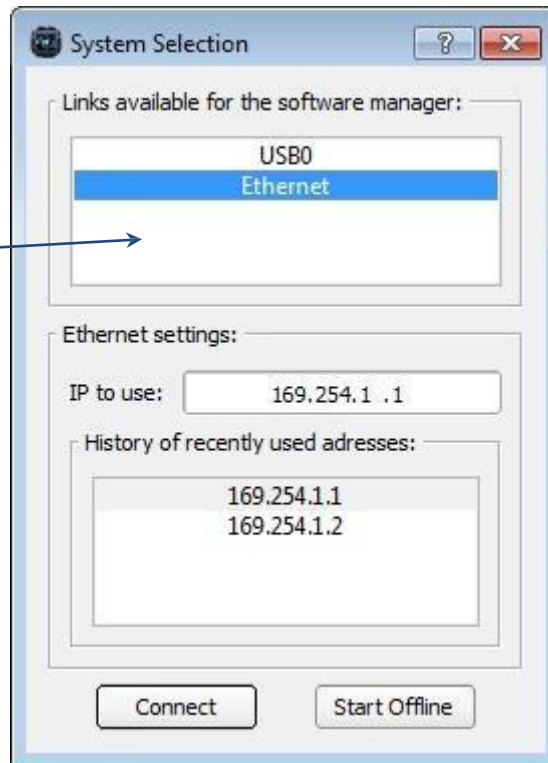


Figure 2: “Software Manager” – System selection page

This system selection window allows selecting the operating mode of “Software Manager” between “Online” and “Offline” mode.

When users click on the “Start Offline” button, the “Software Manager” starts in “Offline” mode. This mode allows editing a scene without being connected to real system. The user can create a new empty project or open an existing one, insert/remove/move fixture to scene and save the scene in a configuration file.

This created scene can be used later in the “online” mode to configure a real scene.

The “Software Manager” starts in the “Online” mode when the users selects the interface used to controls the HDMI system through VPU and the click on “Connect”. The interface is either Ethernet (always proposed on the list) or USB (only displayed on the list when software detects a VPU connected to the PC through USB). When the Ethernet link is selected, the user must enter the IP address or select one in the IP addresses history list.

In this mode, the “Software Manager” is connected to a VPU through USB or Ethernet link, and is now able to control the whole scene (VPU and fixtures with LPU).

1.5. General system properties

1.5.1. Fixtures Numbering and Naming rules

All fixtures composing a scene are daisy-chained by HDMI links on the 4 HDMI outputs of the VPU. Each fixture of a daisy-chain (connected to the same HDMI output of the VPU) must have a unique number (address) allowing to software to control this fixture.

These numbers are allocated by an “enumeration” command sent to all fixtures (in broadcast mode) by the VPU software on each HDMI output of the VPU.

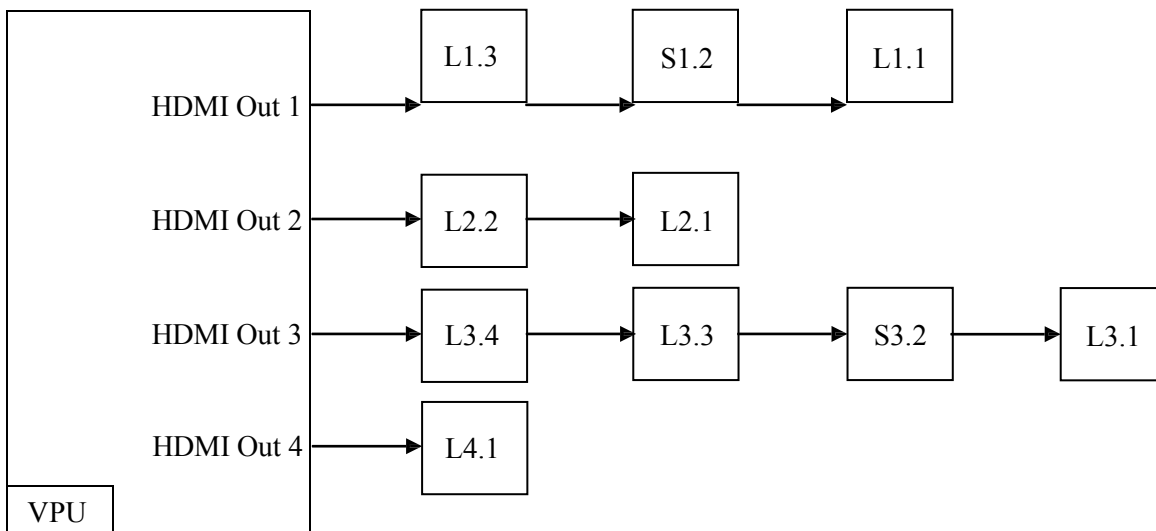
After this command, each fixture (LPU and SASU) has a unique fixture number allowing the VPU software to send commands to a specific fixture.

This number could be:

- Volatile (Written by “VPU Software” in fixture’s volatile memory and lost when fixture restart, this could be the case during scene construction when HDMI cabling between fixtures changes frequently),
- Permanent (Written by “VPU Software” in fixture’s non-volatile memory and loaded by fixture software when it starts, in order to avoid doing enumeration when the scene didn’t changes).

Enumeration rules:

- The last fixture on the HDMI chain (furthest from the VPU HDMI Output) takes number 1.
- The first fixture on the HDMI chain (closest to the VPU HDMI Output) takes a number equal to the number of fixtures in the chain.
- Fixtures are identified by a letter and two numbers “XY.Z”, with :
 - o X: Fixture Type (Only useful for “Software Manager”):
 - “L”: LPU
 - “S”: SASU
 - o Y: VPU’s video output (1 to 4)
 - o Z: Fixture number (coded on 4 bytes and starting from 1)



On the “HDMI Software Manager”:

- Fixtures properties:
 - On creation (with paintbrush tools), identifiers are initialized with:
 - VPU’s Video output unassigned (=0) identify a fixture not cabled (not associated to a VPU’s HDMI Output)
 - Fixture Number = first not used fixture number
 - On deletion, fixtures using the same output and having higher numbers are renumbered by decreasing this number.

- Group Properties:
 - All fixture groups are identified by:
 - A group number (coded on 2 bytes and starting from 1)
 - A group name (32 characters max including the ‘\0’ character at the end of the string)
 - On insertion (with paintbrush tools):
 - Default Name is: “**Group X**” (with X: Group number)
 - Group Number = first not used group number
 - On deletion:
 - All group fixtures are deleted
 - Higher group numbers are renumbered
 - On Group/Ungroup:
 - Higher group numbers are renumbered

1.5.2. DMX Commands

The following DMX commands are implemented on the system:

<i>DMX Command</i>	<i>Channel Size</i>	<i>Default Channel</i>	<i>Description</i>
DMX Enable	1	1	Enable DMX link: 000: Disabled - Commands on DMX link are ignored by VPU 001-255: Enabled - Commands on DMX link are processed by VPU
Mode	1	2	Select VPU Operating Mode: 000: Ignored 001-010: Select Video Input HDMI Channel 1 011-020: Select Video Input HDMI Channel 2 021-030: Select Video Input DVI Channel 1 031-040: Select Video Input DVI Channel 2 041-050: Freeze Output 051-060: Show Cabling Sequence on LPU 061-070: Full screen red 071-080: Full screen green 081-090: Full screen blue 091-100: Full screen white 101-110: Full screen black 111-120: Full screen custom color 121-255: Ignored
Brightness	1	3	Brightness applied on selected video input by VPU's HDMI receiver. DMX command [1 to 255] => Brightness [0% to 100%]
Contrast	1	4	Contrast applied on selected video input by VPU's HDMI receiver. DMX command [1 to 255] => Contrast [0% to 100%]
Hue	1	5	Hue applied on selected video input by VPU's HDMI receiver. DMX command [1 to 255] => Hue [-90° to 90°]
Saturation	1	6	Saturation applied on selected video input by VPU's HDMI receiver. DMX command [1 to 255] => Saturation [0 to 100%]
Color Temperature	4	7	Color Temperature to be applied on Output Screen by VPU (Range [2000K; 11000K], in 100 °K units) Command 1 - Mode: 000-010: Color temperature correction disabled 011-020: Custom Color temperature correction (Use 1 next Command) 021-030: Expert color temperature correction (Use 3 next Commands) In Custom mode, Command 2: 000-019: Command is ignored 020-110: Custom Color temperature \ 100 => range [2000;11000] °K 111-255: Command is ignored In Expert mode, Command 2-4: 000-255: Color temperature coefficient [0 to 255] => [0.0 to 1.0]
Gamma	3	11	Gamma correction coefficients of Red, green and blue component (each byte represent the gamma of one component in 0.1 step : range [0.1 to 6.6] is coded [1 to 66]) 000: Ignored

			001-066: Gamma / 10 077-255: Ignored
Test Color	3	14	Individual Red, Green and Blue components levels for full screen custom color test mode (from 0 to 255)
Launch Video Presetting	1	17	Launch a Video presetting from VPU memory: 000: Ignored 001-008: Presetting number 009-255: Ignored

1.6. Graphical User Interface description

1.6.1. Main window description

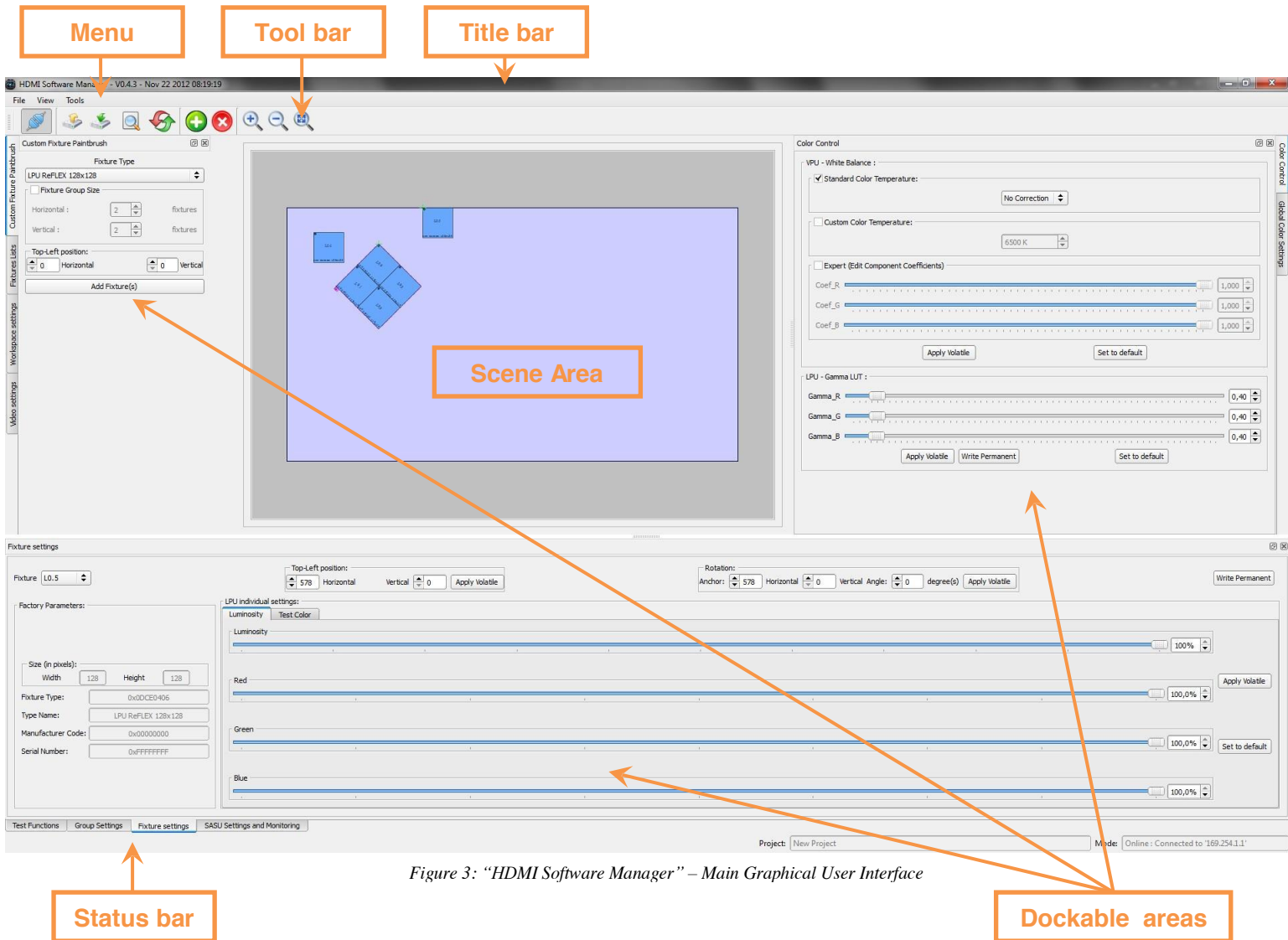


Figure 3: "HDMI Software Manager" – Main Graphical User Interface

The main graphical user interface above is displayed after system and mode selection.

This interface is mainly composed of:

- A title bar on the top, displaying:
 - o Application Name,
 - o Application Version,
 - o Application Build Date.
- A menu bar right below,
- A toolbar (hide-able, dock-able, movable and resizable),
- A central graphical scene area (always displayed),
- A status bar at the bottom of window,
- Different Windows (hide-able, dock-able, movable and resizable),

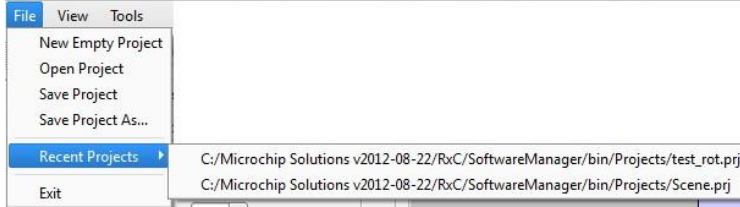
Dock-able windows and tool bars can be placed on top, bottom, left or right of central graphical scene.

Position and display status of all windows is saved when application is closed and restored when application starts.

4.6.1. Menu bar description

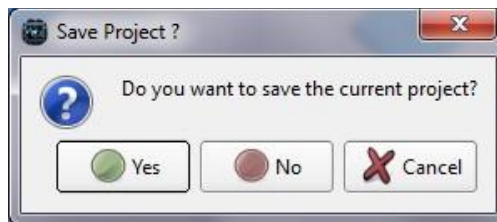
The top menu bar contains the following 3 items:

- A “File” item with following content:

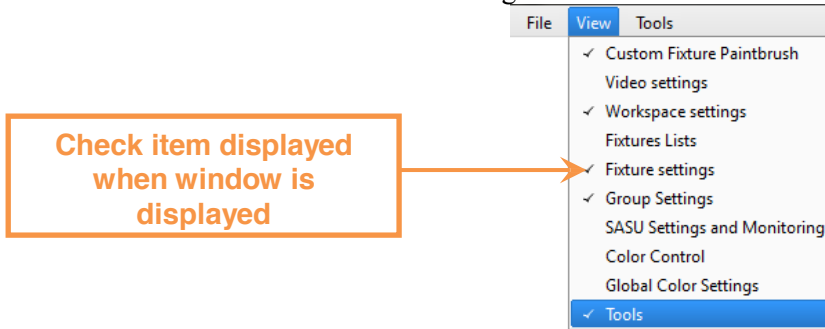


Item	Function description
New Empty project*	Start a new empty project with default settings.
Open Project*	Open a popup window allowing to choose a project (file with ‘.prj’ extension) to load on “HDMI Software Manager”
Save Project	Save the current project in an external ‘prj’ file: <ul style="list-style-type: none">- On the current project file if project have already been saved.- On a file specified in a popup window.
Save Project As...	Save the current project in a file specified on a popup window.
Recent Projects	Display a list of 10 lasts project files used on “HDMI Software Manager”
Exit*	Close “HDMI Software Manager” application

* The user is always asked, by the pop-up window shown below, if the current project needs to be saved or if the requested action must be cancelled, in order to avoid loss of current project work.



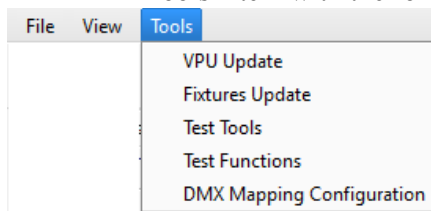
- A “View” item with following content:



This menu allows displaying or hiding the following windows:

Item	Function description
Custom Fixture Paintbrush	Window allowing to add single or group of fixtures on graphic scene
Video settings	Window allowing selection of active video input channel and enabling of scaling (up and down), rotation and offset.
Workspace settings	Window allowing customizing the workspace by displaying helper tools (grid, background image and red border).
Fixture Lists	Window displaying fixture(s) list(s).
Fixture settings	Window allowing displaying and modification of single fixture properties.
Group Settings	Window allowing displaying and modification of single fixture properties.
SASU Settings and Monitoring	Window allowing displaying and modification of single SASU fixture properties.
Color Control	Window allowing to control White Balance and Gamma color corrections
Global Color Settings	Window allowing controlling brightness, contrast, hue and saturation color corrections on VPU.
Tools	Tool bar window with general function buttons.

- A “Tools” item with the following content:



Item	Function description
VPU Update*	Window allowing to display and program VPU properties (manufacturer and serial numbers...) and firmware (FPGA and software...)
Fixtures Update*	Window allowing to display and program fixtures properties and firmware (FPGA and software...)
Test Tools*	Window test tools functions (especially for manufacturing and debugging purposes.
Test Functions	Basic test functions (full screen color, show fixture number and freeze)
DMX Mapping Configuration	Window allowing to display and configure the VPU’s DMX mapping

* Access to these windows is restricted to expert users, so that only expert users can update the firmwares of the HDMI system. The expert user needs to enter a password through the following pop-up to launch requested window.



4.6.2. Tool bar description

The tool bar appearance changes according to On line/Off line mode:

- In Offline mode:



- In Online mode:





The toolbar allows to access to following functions:


- **Connection / Disconnection button**

Connected state:  Click to disconnect


Disconnected state:  Click to connect

-  **“Upload Configuration from VPU” button.** *
Click on this button to import a full scene configuration from the VPU and configure the “HDMI Software Manager” in consequence.
-  **“Download configuration to VPU” button.** *
Click on this button to export a full scene configuration from the “HDMI Software Manager” to the VPU.

* Upload/download of configuration includes the following properties:






- Fixtures list with:
 - Identification (Type, Manufacturer and Serial Number),
 - Position (horizontal and vertical offset),
 - Rotation angle and anchor position,
 - Group properties if including in a group.
 - Current video settings used on VPU:
 - Video input channel and detected video input properties (presence and format),
 - Rotation, offset and scaling properties,
 - Color corrections.
 - Current DMX mapping used on VPU.
-  **“Launch fixture enumeration on VPU” button.**
Click on this button to launch an enumeration on VPU. This function performs the following actions:
 - Reset communications links between VPU and fixtures (I2C link of HDMI outputs),
 - Reset all fixtures,
 - Send enumeration command to all fixtures (broadcast) in order to detect fixtures number connected to each HDMI outputs and assign a unique number (address) to each fixture.
 - Write address in the fixture’s non-volatile memory, in order to remember the address after reboot.

This function must be run when the user has finished fixture cabling and want to save the fixture addresses in non-volatile memory, in order to be able to control each fixture without importing configuration from the VPU.

-  **“Reset fixture” button.**
This function is almost the same than previous “Launch fixture enumeration on VPU” except than addresses is not written in non-volatile memory. This function is to be used when scene is under construction and fixtures cabling often changes, in order to extend non-volatile memory life time.

Important: the enumeration action performed in “Launch” and “Reset” functions above is also performed automatically when the VPU starts. It must be executed each time that:

- Fixture is turned on/off after VPU starts,
- Fixture(s) are hot plugged / unplugged,
- Fixture cabling order is modified.

-  **“Add Fixtures” button.**
Click on this button to display “Paintbrush tools” window allowing adding single or group of fixtures on graphic scene.
-  **“Delete selected Fixture” button.**
Click on this button to delete all selected fixtures on graphic scene.
-  **“Zoom In” button.**
Click on this button to enlarge the graphic scene area.
-  **“Zoom Out” button.**
Click on this button to shrink the graphic scene area.
-  **“Zoom All” button.**
Click on this button to display all full HD area in the graphic scene area.

4.6.3. Status bar description



The status bar shown above contains:

- A text message area displaying short text message indicating actions or errors,
- Current project name (“New Project” if not saved),
- Connection mode and link used if connected to the VPU.

4.6.4. **Graphic Scene**

4.6.4.1. Full scene description

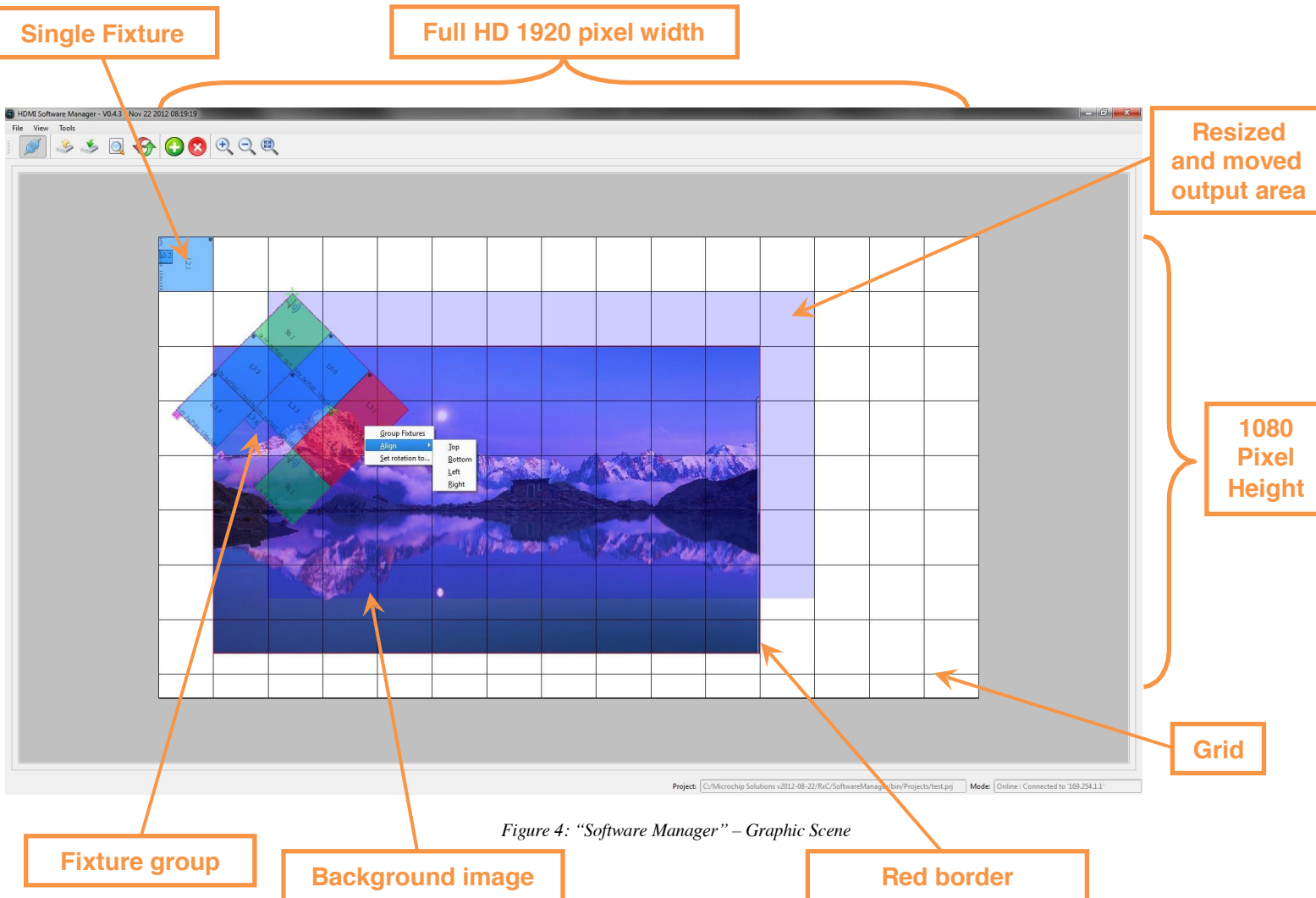


Figure 4: “Software Manager” – Graphic Scene

The central area (always displayed) represents the “Graphic Scene” and is always displayed by the “HDMI Software Manager”.

The white area represents the VPU video output, whose resolution is always full HD – 1920*1080 pixels.

Single fixtures and groups of fixtures composing the current project are drawn at their position and with their rotation angle on the video output area.

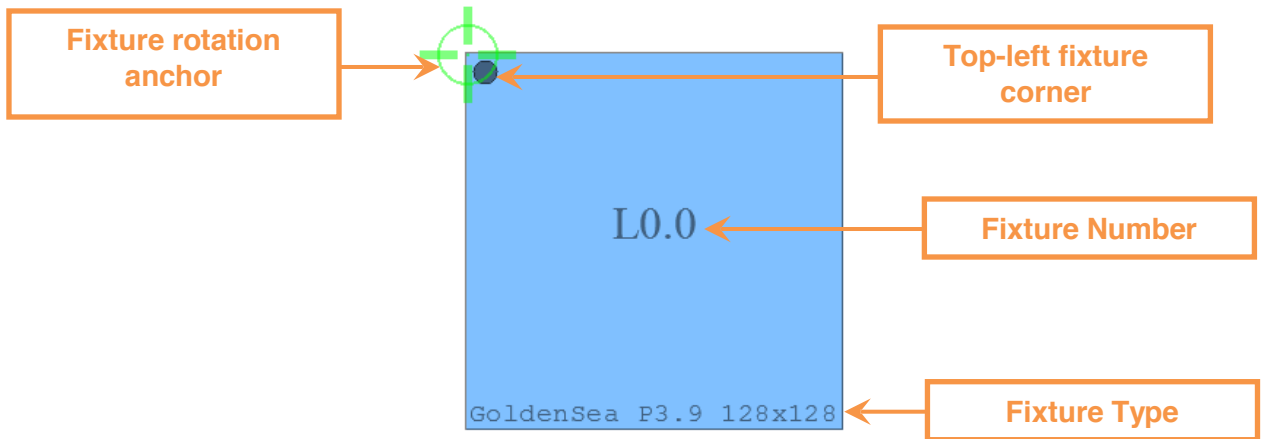
The following additional tools are available in order to facilitate fixtures positioning on full HD video output area:

- Vertical and horizontal black grid lines with customizable width and height steps,
- Background image with customizable horizontal offset, vertical offset, width and height,
- Red rectangle with customizable horizontal offset, vertical offset, width and height,
- Video output active area in purple on the above image (corresponds to video input upscaled/downscaled, rotated and moved horizontally and/or vertically).

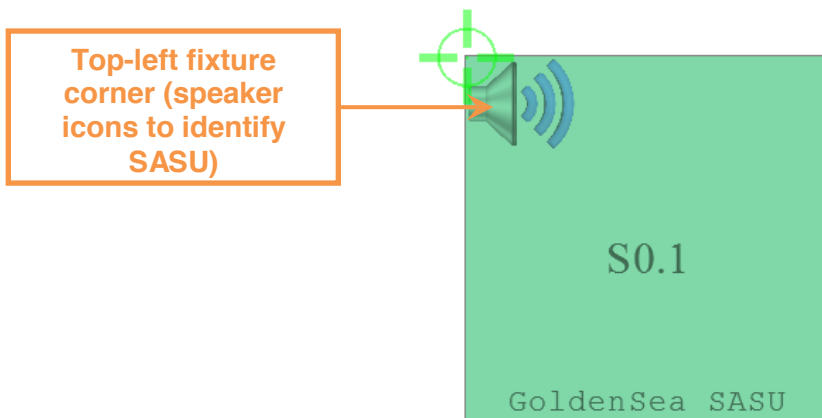
For more details on the properties and settings of the additional tools, see the dedicated “Workspace” and “Video settings” Windows paragraphs.

4.6.4.2. Graphic items description

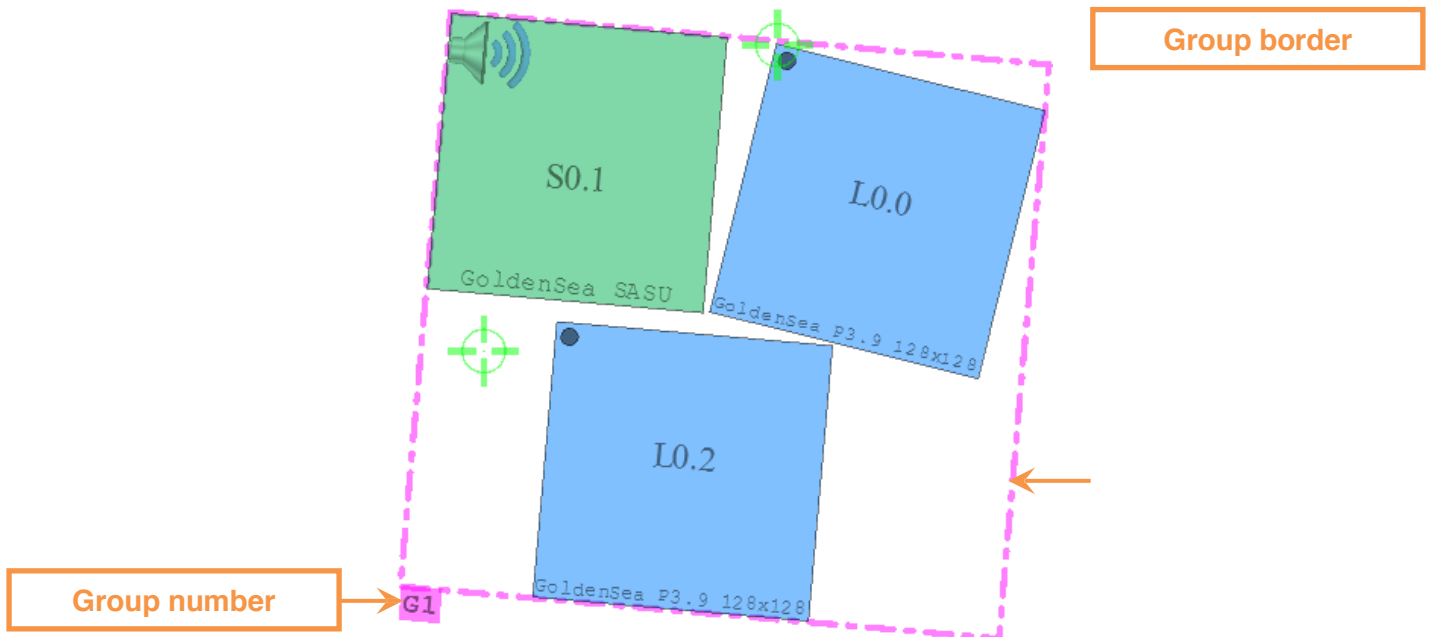
LPU fixtures are represented on graphic scene area by the following graphic item:



SASU fixtures are represented on graphic scene area by the following graphic item:



Fixtures group are represented on graphic scene area by the following graphic item:

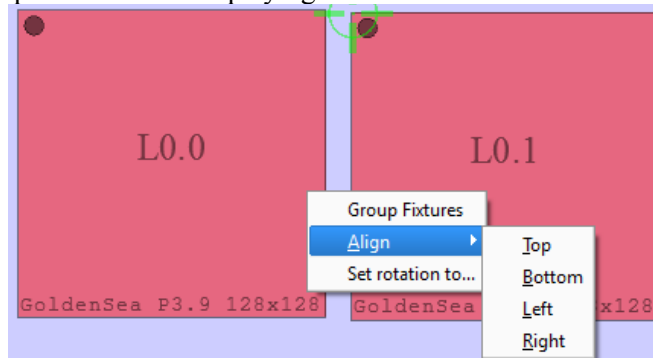


4.6.4.3. Graphic scene contextual menu and shortcuts

Following actions are available through mouse right-click on the graphic scene area and keyboard shortcut:

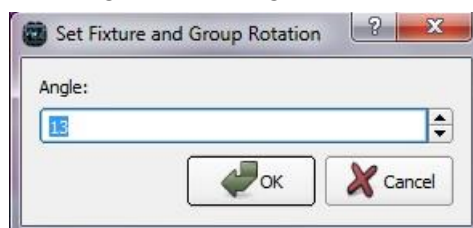
- **Zoom In:**
Press “Ctrl” and “+” keys to enlarge displayed part of scene in the graphic scene area.
The same action can be done using the “Ctrl” key and rolling up the central mouse wheel.
- **Zoom Out:**
Press “Ctrl” and “-” keys to shrink displayed part of scene in the graphic scene area.
The same action can be done using the “Ctrl” key and rolling up central mouse wheel.
- **Zoom on selection:**
Press the “Ctrl” key and select scene area with mouse to zoom on selected zone of the scene.
- **Select several fixtures:**
 - o Press the “Ctrl” key and click on several fixtures items with left button to select several fixtures.
 - o Press the left button of the mouse on a graphic scene area without fixture and move the mouse to draw a rectangle including all fixtures to be selected, then release the mouse button to select the fixtures.For information, fixtures can also be selected as follows:
 - o Through selection on Scene and SASU lists windows,
 - o Through group or fixture selection change on “Group”, “SASU” or “fixture” setting windows.

When several fixtures not grouped are selected, right-clicking on a fixture item in the graphic scene area when “Ctrl” key is pressed allows displaying a contextual menu in the image below:

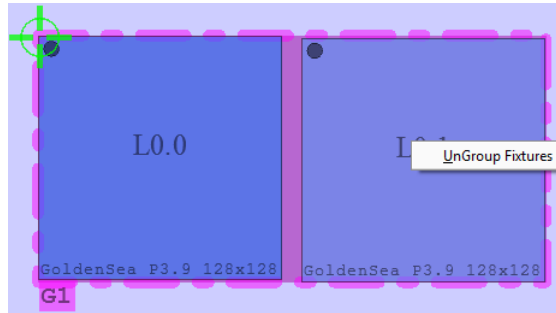


This menu allow following functions:

- **Group fixtures:**
Group all selected fixtures in a group.
- **Align fixtures:**
Align all selected fixtures at Top, Bottom, Left or Right position.
- **Rotate fixtures:** (also available if group(s) are selected)
Allow to specify a rotation angle to be used for all selected fixtures and Groups.
For groups, rotation angle is applied for group itself and included fixtures.
Rotation angle is entered using the following window:



- **Ungroup Fixtures:**
When group(s) are selected, an Ungroup contextual menu allows to ungroup all included fixtures.



4.6.5. **Paintbrush tools**

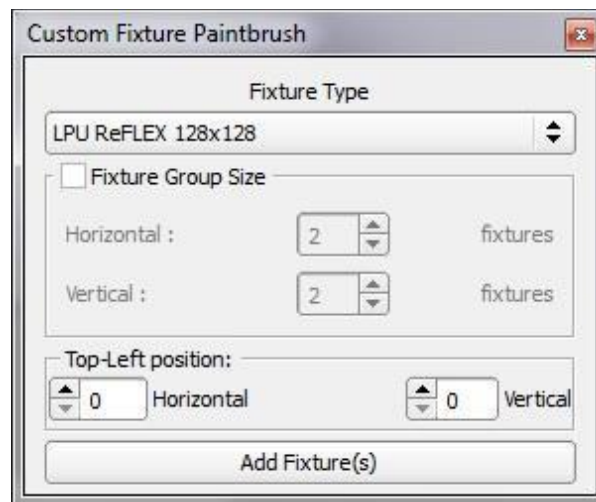


Figure 5: "Software Manager" – Custom Fixture Paintbrush

The above window allows adding a single fixture or a group of fixtures of the same type. Follow the instructions below:

- Select fixture type in list of known fixtures,
- Check "Fixture Group Size" to create a group of fixtures:
 - o Enter the number of horizontal fixtures in the group,
 - o Enter the number of vertical fixtures in the group.
- Enter horizontal and vertical offsets of top left fixture's or group's corner.
- Click on "Add Fixture(s)" to create item(s) on graphic scene.

Note:

Fixtures are created as "not cabled" in the graphic scene (not associated on any VPU video outputs) and need to be cabled using the cabling function of "HDMI Software Manager" before they are able to control fixtures or download configuration on the VPU.

4.6.6. Fixture lists

The “Fixture Lists” window display fixtures of current project on following 3 different lists:

- Scene list,
- Cabling list,
- SASU list.

4.6.6.1. Scene list

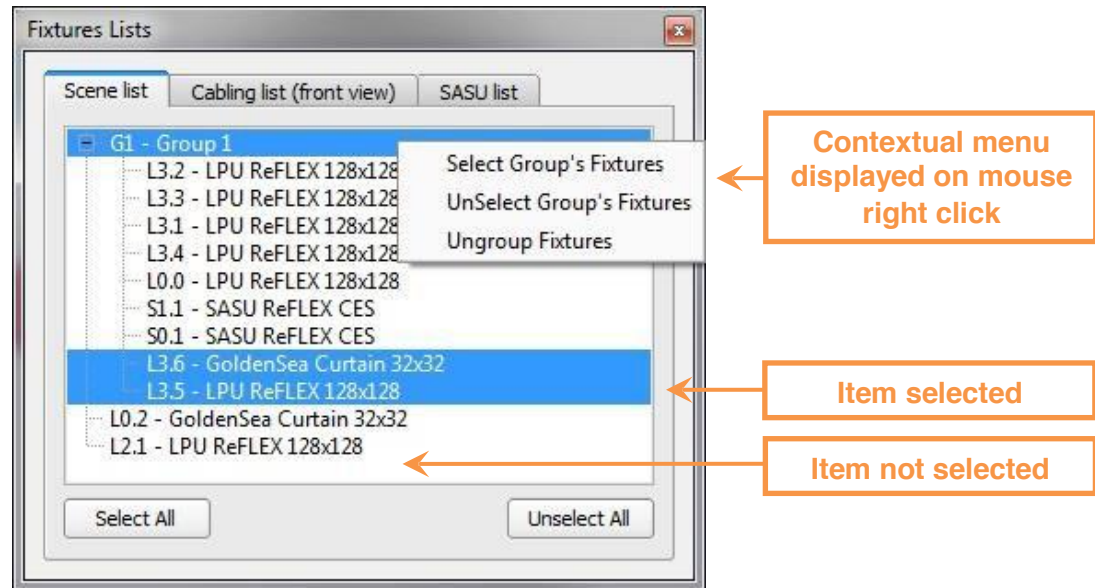


Figure 6: “Software Manager” – Scene List

“Scene list” tabulation of “Fixture Lists” window displays all groups and fixtures of the current project in a tree view style where the groups are listed before single fixtures on the top level and fixtures grouped attached to their groups in a lower level.

Groups are sorted with ascending group numbers.

Fixtures are sorted with ascending fixture number on each VPU Output.

Fixtures and groups items are selected (high-lighted in blue) and unselected by left-clicks with mouse on items.

The following functions are available through a contextual menu displayed by a right click on a tree view items:

- **“Select Group’s Fixtures”:**
Select all fixtures of selected group.
(Only available when clicked item is a Group item or a fixture included in a group)
- **“Unselect Group’s Fixtures”:**
Unselect all fixtures of selected group.
(Only available when clicked item is a Group item or a fixture included in a group)
- **“Group Fixtures”:**
Group selected single fixtures in a group.
(Only available when several single fixtures are selected)
- **“Ungroup Fixtures”:**
Ungroup all fixtures of selected group.
(Only available when clicked item is a Group item)

“Select All” and “Unselect All” buttons allow respectively to select and unselect all fixtures and group of current project.

4.6.6.2. Cabling list

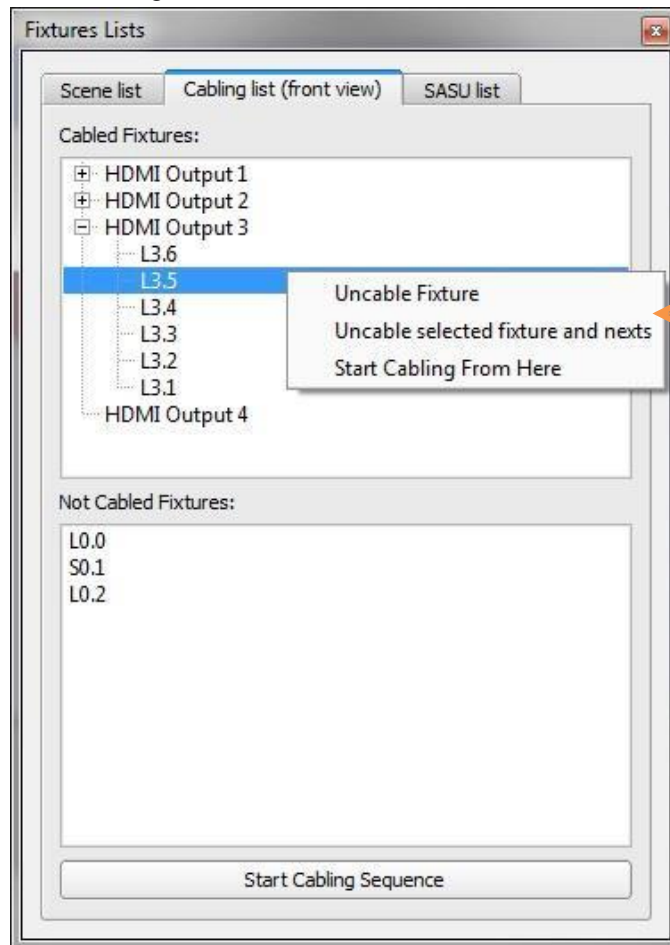


Figure 7: “Software Manager” – CablingList

The “Cabling list (front view)” tabulation of the “Fixture Lists” window displays all fixtures of the current project in a tree view style in cabling order. Fixtures are classified by VPU HDMI Outputs, from fixture nearest to the VPU to fixture most far away from VPU.

When the “Cabling list” tabulation is displayed, the graphic scene area is in cabling mode and displays cabling of fixtures on VPU’s HDMI outputs viewed from front of panels. For each output, arrows are drawn between two consecutive fixtures.

Fixture’s background color of is the following for each HDMI output:

- VPU HDMI Output 1: ■
- VPU HDMI Output 2: ■
- VPU HDMI Output 3: ■
- VPU HDMI Output 4: ■

Fixtures are dispatched on “Cabled / Not Cabled” fixtures according to their cabling state.

Only one item of “Cabled / Not Cabled” Fixtures lists can be selected (highlighted in blue) at a time. The corresponding item on graphic scene area is then selected (red background color) in order to located fixture.

Important Note:

- On “Cabling Mode”, almost all functions of other windows are not accessible.
- When cabling is in progress, it is not possible to quit “Cabling Mode”.

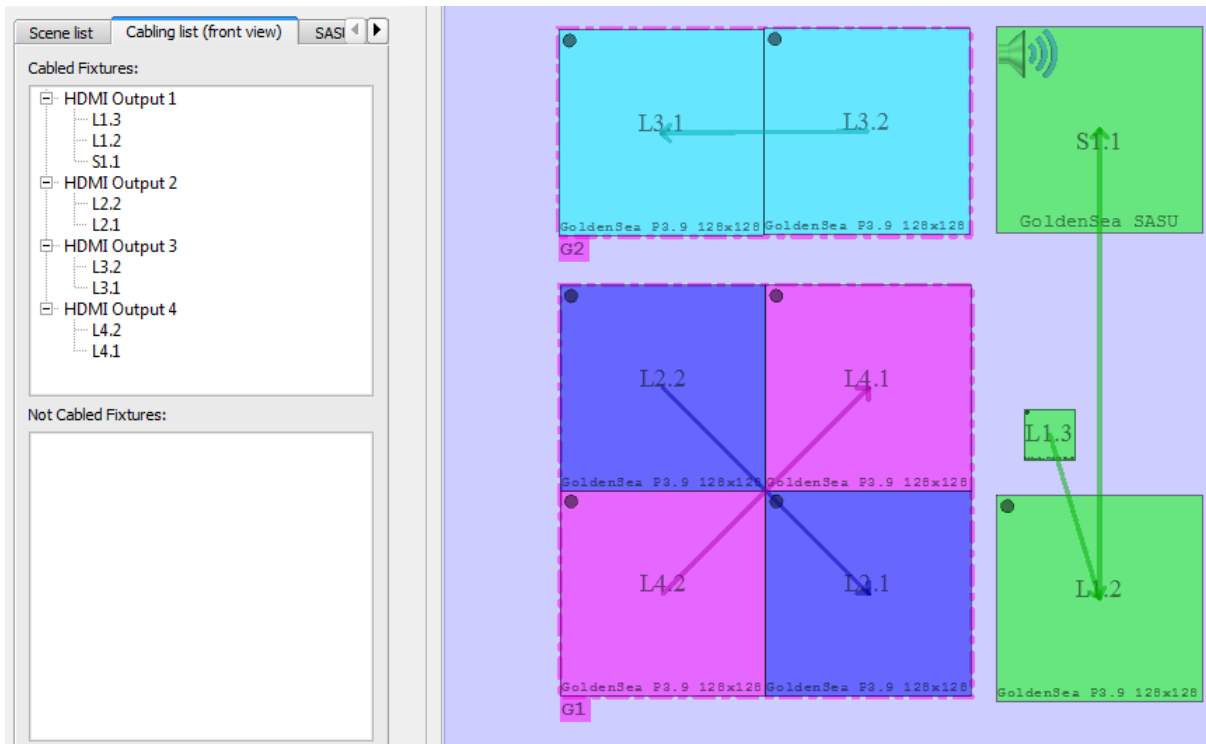


Figure 8: “Software Manager” – Cabling Mode

The following functions are available through contextual menu by right-click on the “Cabled Fixtures” list:

- **“Uncable Fixture”:**
Uncable a single fixture and renumber next fixture(s) on same output.
(Only available when clicked item is a fixture)
- **“Uncable selected fixture and next”:**
Uncable fixture and next fixture(s) on same output.
(Only available when clicked item is a fixture which is not the last on this output)
- **“Start Cabling From Here”:**
Start cabling mode from selected item. Next fixture(s) from this item are uncabled first.
(Only available when fixture(s) are not cabled)
- **“Uncable all fixtures”:**
Uncable all fixtures on a selected HDMI output.
(Only available when clicked item is a top level HDMI Output item)

Fixtures cabling instructions:

Follow the instructions below to cable fixtures:

- 1- Click on the item from which not cabled fixtures must be cabled (HDMI Output or already cabled fixture) in the “Cabled Fixtures” list,
- 2- Click on “Start Cabling Sequence” button or “Start Cabling From Here” contextual menu,
- 3- Double click on the fixture to cable, either:
 - a. On the item on “Not Cabled Fixtures” list
 - b. On the item on graphic scene area
- 4- Continue with next(s) fixtures
- 5- Stop cabling sequence through “Stop Cabling Sequence” button. (to change HDMI output for example)

Cabling sequence automatically stops when all fixtures are cabled.

4.6.6.3. SASU list

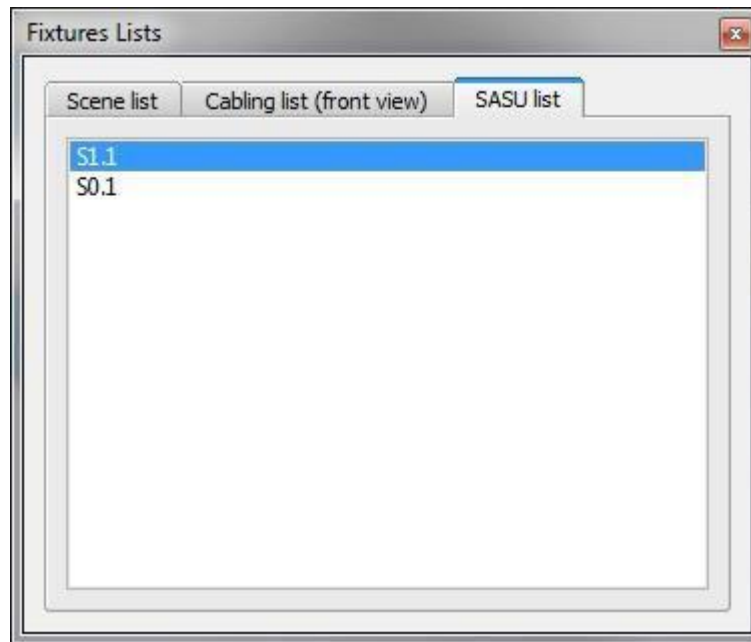
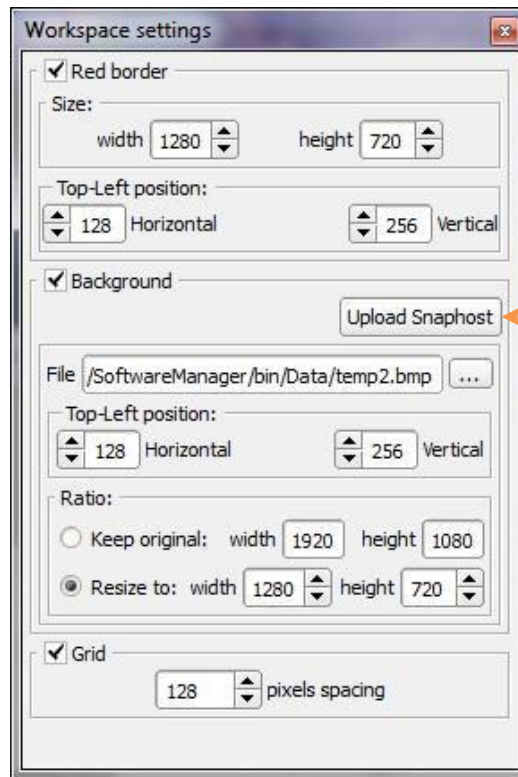


Figure 9: "Software Manager" – SASU List

"SASU list" tabulation of "Fixture Lists" window displays all SASU fixtures of the current project in a single level view style. It allows selecting the SASU fixture on graphic scene area when item is selected (highlighted in blue) on the list.

4.6.7. “Workspace” Window



Download snapshot of current video on VPU to be used as background image

Figure 10: “Software Manager” – Workspace window

The “Workspace” window allows customizing the following helper tools of the graphic scene area:

- **Red border:**
The red border is displayed on the graphic scene area when the “Red border” box is checked. Users can configure the rectangle with custom horizontal and vertical offsets, width and height (in pixel step).
- **Background:**
A background image is displayed on the graphic scene area when the “Background” box is checked. Users can select an external image file (located on hard-drive) and:
 - o Apply a custom horizontal and vertical offset (in pixel step)
 - o Choose between:
 - Keep original image size
 - Resize to custom width and height size (in pixel step and with 1920*1080 max)

Valid image files are: *.bmp, *.gif, *.jpg, *.jpeg, *.png, *.pbm, *.pgm, *.ppm, *.tiff, *.xpm and *.xpm

The “Upload Snapshot” button (only available when “HDMI Software Manager” is connected to a VPU) allows freezing current video on VPU and downloading snapshot on a file chose by user. This image is then displayed on background in the graphic scene area of “HDMI Software Manager”. VPU HDMI Outputs remains full black during VPU snapshot uploading.

- **Grid:**
Black line grid is displayed on the graphic scene area when the “Grid” box is checked. Users can configure the space between lines in pixel step.

4.6.8. “Video settings” window

Video presence and format of checked video input

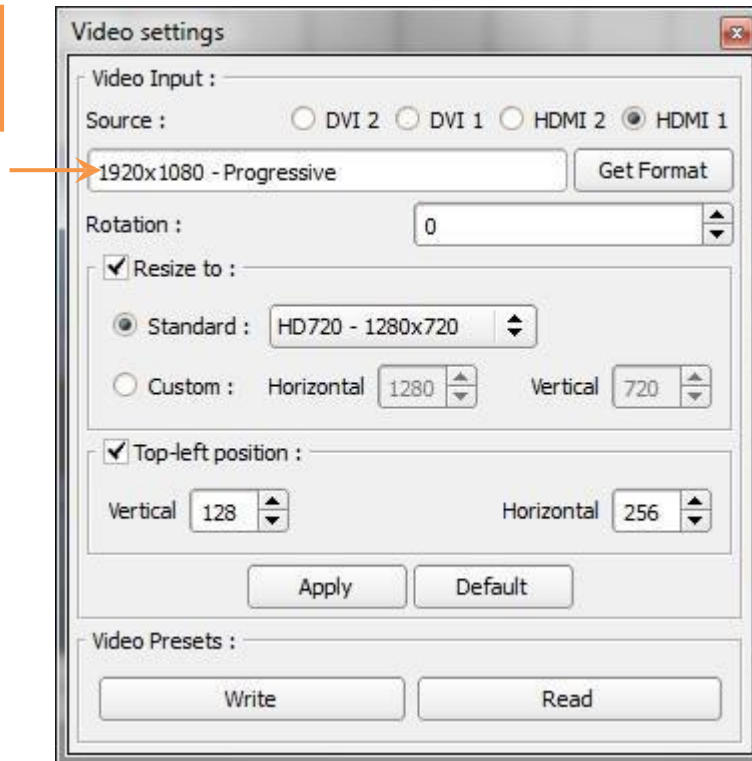


Figure 11: “Software Manager” – Video settings window

The “Video settings” window is divided in two areas allowing to:

4.6.8.1. Get and set “Video Input” settings

- Get presence state and video format of the VPU input selected on the source list:
 - o Select video input channel on “Source” list (“DVI2”, “DVI1”, “HDMI2” or “HDMI1”)
 - o Click on “Get Format” button.
 - ⇒ Text button next to “Get Format” button displays:
 - “Not Locked” if no signal is detected on VPU
 - *WidthxHeight – Mode*, if a valid signal is detected, with:
Mode: Interlaced or Progressive
- Select current VPU input and configure:
 - o Rotation (-90°, 0° or 90°) to be applied to video input before resizing,
 - o Output video format:
 - Standard:
Choose a standard format between
 - HD1080 – 1920x1080
 - UXGA – 1600x1200
 - SXGA – 1280x1024
 - HD720 – 1280x720
 - XGA – 1024x768
 - Custom:
Choose custom width [128;1920] and height [64;1080] in 8 pixel steps.
 - o Horizontal [0;1919] and vertical [0;1079] offset to be applied to top-left corner of the VPU video outputs (in 1 pixel step)
- Configure connected VPU with video input settings (input selection and format) when user click on “Apply” button.
- Restore default settings of “Video Input” group box when users click on “Default” button.

4.6.8.2. Manage “Video Presetting”

Video presetting allows saving or restoring, to or from VPU’s non-volatile memory, the video configuration of the VPU.

The video presetting includes the following parameters:

- Video input channel selection (HDMI1, HDMI2, DVI1 or DVI2),
- Video output settings:
 - o Rotation (+90, 0 or -90°)
 - o Format (width and height)
 - o Offset (horizontal and vertical),
- HDMI receiver corrections (Brightness, Contrast, Hue and Saturation),
- White temperature correction parameters.

8 customs and one default video presetting are available in the VPU’s non-volatile memory.

The 8 customs presetting can be read/written by “Software manager” or launched through VPU’s LCD screen.

The default video presetting is launched when VPU software starts.

The following “Video Presetting” area of “Video Input” windows allows to write and read video presettings to or from VPU’s non-volatile memory.



Figure 12: “Software Manager” – Video Preset area of Video settings window

1/ To write video setting to VPU:

- Click on “Write” button.

The following window appears:

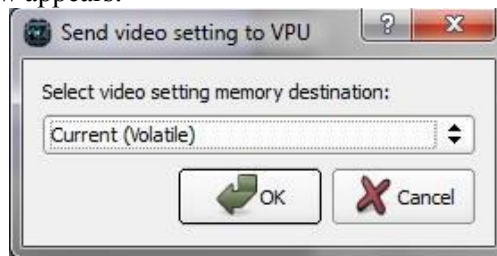


Figure 13: “Software Manager” – Write Video Preset window

- Select VPU memory to write with current video settings of software manager in the list below:

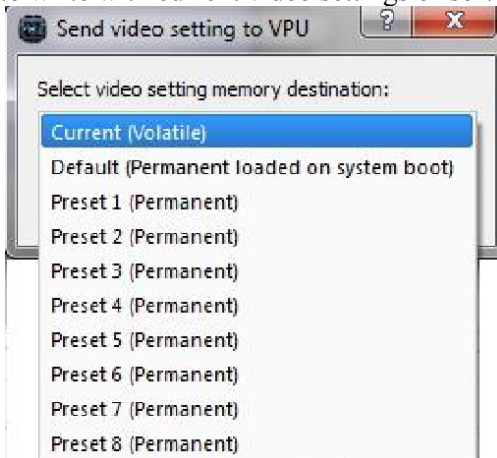


Figure 14: “Software Manager” – Write Video Preset list window

The current choice allows modifying all current video settings of VPU in volatile.

- Click on “Write” button to send video settings.

2/ To read video setting from VPU:

- Click on “Read” button. (figure : “Software Manager” – Video Preset area of Video settings window)
A window similar to “Software Manager” – Write Video Preset window” appears.
- Select VPU memory to read from the list,
- Click on “Read” button to read video settings.
Video settings are read from selected VPU memory and different HDMI Software Manager windows are configured with these settings.

4.6.9. “SASU Settings and Monitoring” window

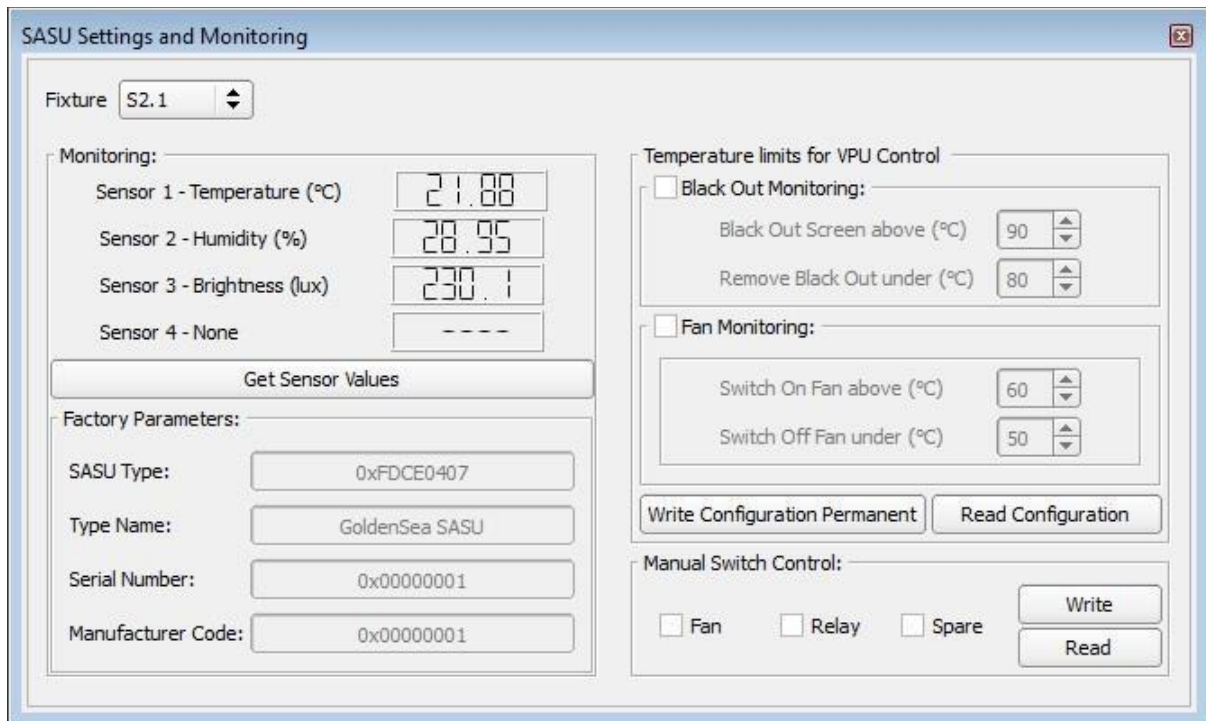


Figure 15: “Software Manager” – SASU settings and Monitoring window

The “SASU Settings and Monitoring” window allows to:

- Select a fixture from current scene.
Both SASU and LPU are available in the list.
But LPUs does not implement FAN, Spare and Relay outputs. Consequently the “Temperature limits for VPU Control” area is not accessible and only SASUs are monitored by VPU to control blackout, Fan monitoring and Manual Switch Control.
- Display Factory Parameters of selected fixture:
 - o SASU Type,
 - o Type Name,
 - o Serial Number,
 - o Manufacturer Code.
- Display sensors values when the user clicks on “Get Sensor Values” button (according to sensor settings).

For SASU fixtures only, the “Temperature limits for VPU Control” area allows to:

- **Configure the blackout monitoring function:**

This function is a monitoring performed by VPU software which control the temperature measured on a SASU and set the VPU video output all black if it exceeds the specified limit. The all black output is removed when temperature goes under a low limit. Monitoring is performed every 5 seconds individually for each SASU connected to VPU.

The “Black Out Monitoring” area allows to configure this function by:

- Activating/deactivating the function by checking/unchecking the “Black Out Monitoring” check box,
- Specifying the temperature above which the video output is set all black,
- Specifying the temperature under which the all black output is removed.

- **Configure the fan monitoring function:**

This function is a monitoring performed by VPU software which control the temperature measured on a SASU and activate an external fan (by a dedicated SASU output connector) if the temperature exceeds the specified limit.

The external fan is deactivated when temperature goes under a low limit.

Monitoring is performed every 5 seconds individually for each SASU connected to VPU.

The “Fan Monitoring” area allows configuring this function by:

- Activating/deactivating the function by checking/unchecking the “Fan Monitoring” check box,
- Specifying the temperature above which the fan is activated,
- Specifying the temperature under which the fan is deactivated.

- The “Write Configuration Permanent” button allows saving the Blackout and fan monitoring setting on SASU nonvolatile memories. These settings will be applied on next SASU reboot.

- The “Read Configuration” button allows displaying the blackout and fan monitoring settings saved in non-volatile SASU memories.

For SASU fixtures only, the “Manual Switch Control” area allows to manually get and set state of “Fan”, “Relay” and “Spare” SASU outputs:

- Click on “Read” button to get current output state,
- Modify output state by checking/unchecking dedicated check box item and click on “Write” button.

4.6.10. “Color Control” window

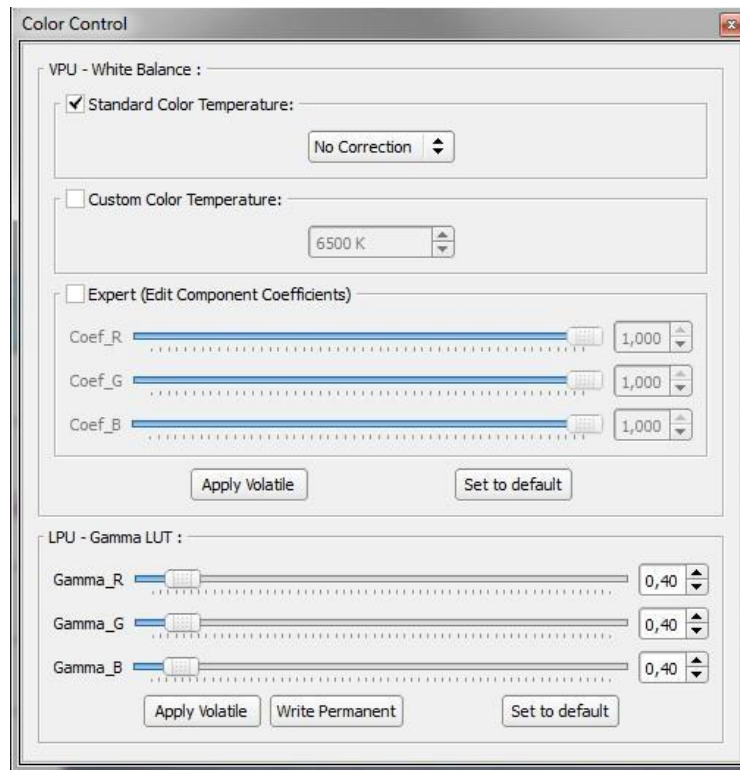


Figure 16: “Software Manager” – Color Control window

The “Color Control” window is divided in two areas allowing to:

4.6.10.1. Configure “White Balance” correction on VPU

The “White Balance” correction applied by VPU firmware on video input can be configured by one of the following 3 modes (mode is selected when dedicated check box is checked):

- *Standard mode* :
Selection between “No Correction” (all coefficient equal to 1.0) and standard color temperatures: 3200°K, 6500°K, 9600°K.
- *Custom mode* :
Selection of the color temperature in range [2000;11000] °K.
- *Expert mode* :
User can adjust the 3 multiplier coefficients (Red, Green and Blue) in range [0.0;1.0].

The configured “White Balance” correction is applied in volatile when users click on “Apply Volatile” button.

The default “White Balance” correction with no correction is restored when user click on “Set to default” button.

4.6.10.2. Configure “Gamma LUT” correction on LPU

The gamma correction is applied on the video input signal by the LPU/SASU’s FPGA to obtain a LED intensity increasing linearly with input color level.

Users can adjust the Gamma correction of each color component by:

- Specifying the Gamma value of each component between 0.01 and 6.0,
- Clicking on “Apply volatile” button to configure LPUs with this setting (lost on next reboot),
- Clicking on “Write Permanent” button to write this settings in non-volatile memories of LPUs (applied on next reboot),
- Clicking on Set to default to restore the default gamma value of 0.4.

4.6.11. “Global Color Settings” window

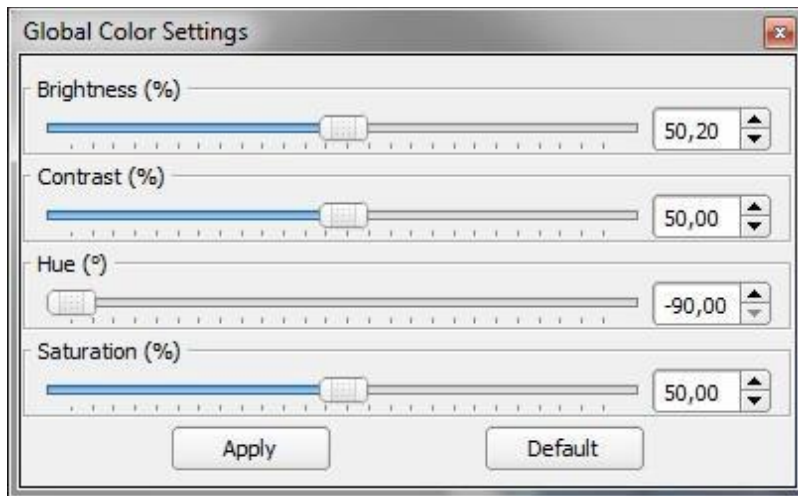


Figure 17: “Software Manager” – Global Color Settings window

The “Global Color Settings” window allows adjusting the following color correction applied by VPU on its selected video input:

- **Brightness:**
From 0% (darkest) to 100% (brightness) – Single Step: 100.0/255.0 % – Default: 50 %
- **Contrast:**
From 0% (lowest) to 100% (highest) – Single Step: 100.0/255.0 % – Default: 50%
- **Hue:**
From -90° to +90° – Single Step: 180.0/255.0 ° – Default: -90°
- **Saturation:**
From 0% (lowest) to 100% (highest) – Single Step: 100.0/255.0 % – Default: 50%

When HDMI Software Manager is connected to a VPU, these settings are sent to VPU when user move de slider, modify and numeric value or press on “Apply” button.

Default correction settings are restored when user click on “Default” button.

4.6.12. “Test Functions” window

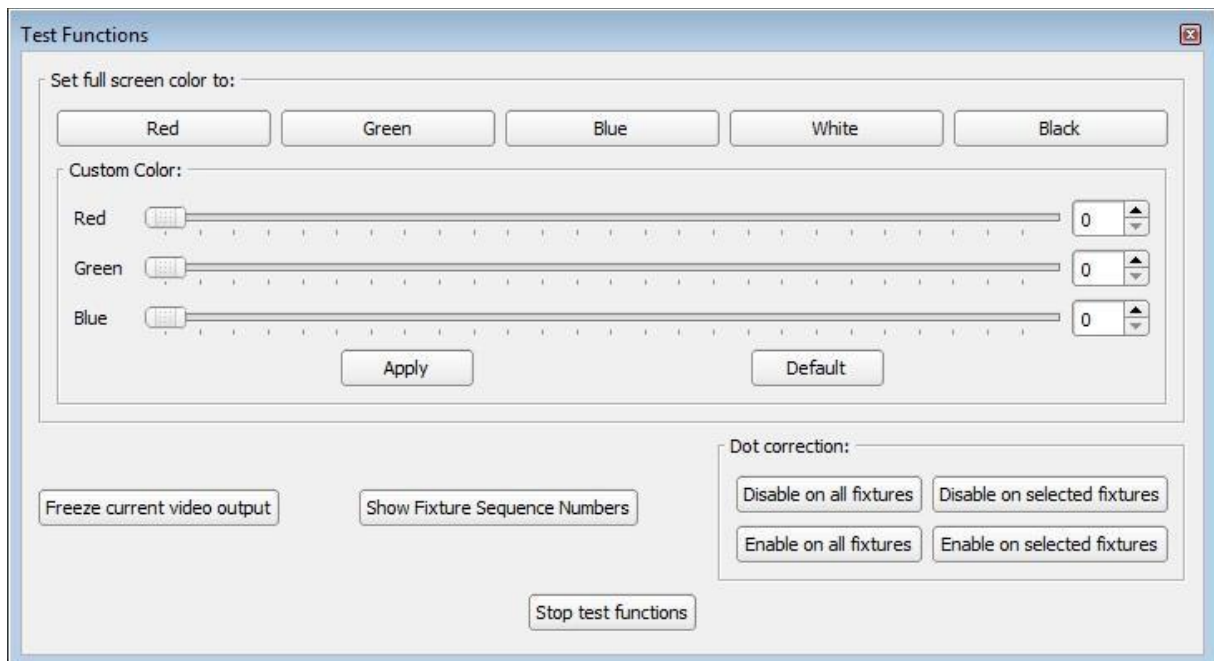


Figure 18: “Software Manager” – Test Functions window

The “Test Functions” window allows activating following test patterns:

- Predefined full screen color on VPU video outputs (Red, Green, Blue, White or Black)
- Custom full screen color on VPU video outputs
User specifies the level of each color component.
When HDMI Software Manager is connected to a VPU, these settings are sent to VPU when user move de slider, modify and numeric value or press on “Apply” button.
The default black color is restored when user clicks on “Default” button.
- Freeze current VPU video output
- Show fixture sequence numbers on each LPU (to display the cabling order on the screen)
- Enable or disable dot correction (gain correction) on selected fixtures or all fixtures, allowing comparing the displayed image with or without dot correction.
- Stop test functions to remove all above test patterns.

4.6.13. “Group setting” window

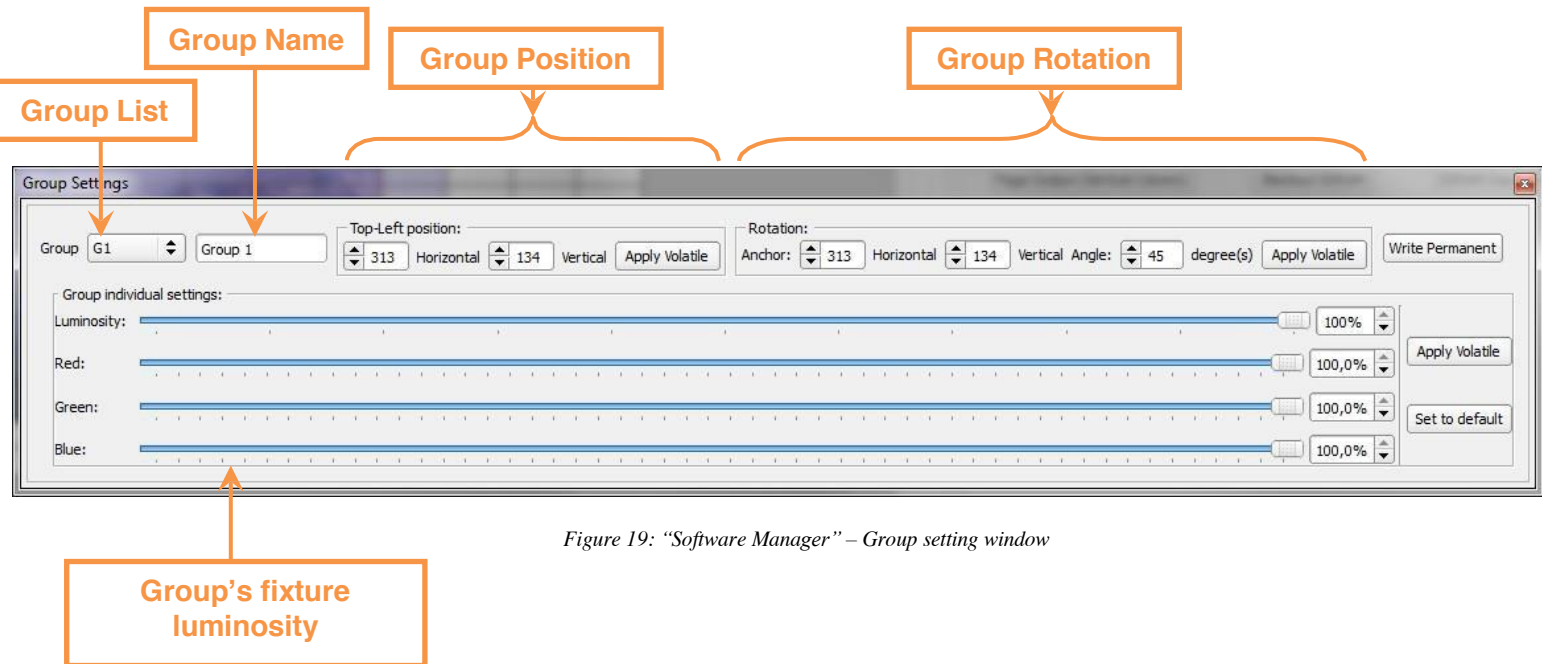


Figure 19: “Software Manager” – Group setting window

The “Group setting” window allows to:

- Select one group from the current scene in the “Group List”,
 - Display and modify the current Group Name (32 characters maximum),
 - Display and modify the Top-Left position (horizontal and vertical) in group position area.⁽¹⁾
 - Display and modify anchor position and group rotation angle (from -180° to +180°).⁽¹⁾
 - Display and modify luminosity of all group’s fixtures.⁽¹⁾
Luminosity can be adjusted for each color components and globally (for all components).
Default setting is 100% for all (components and global).
 - All those settings can be written in non-volatile memories for group’s fixtures by clicking on “Write Permanent” in order to keep settings when fixtures reboot
- (1) These parameters can be configured individually in volatile memory (by clicking on “Apply Volatile”) in order to test it before to be written in permanent memory (they are lost on next fixtures boot).

4.6.14. “Fixture setting” window

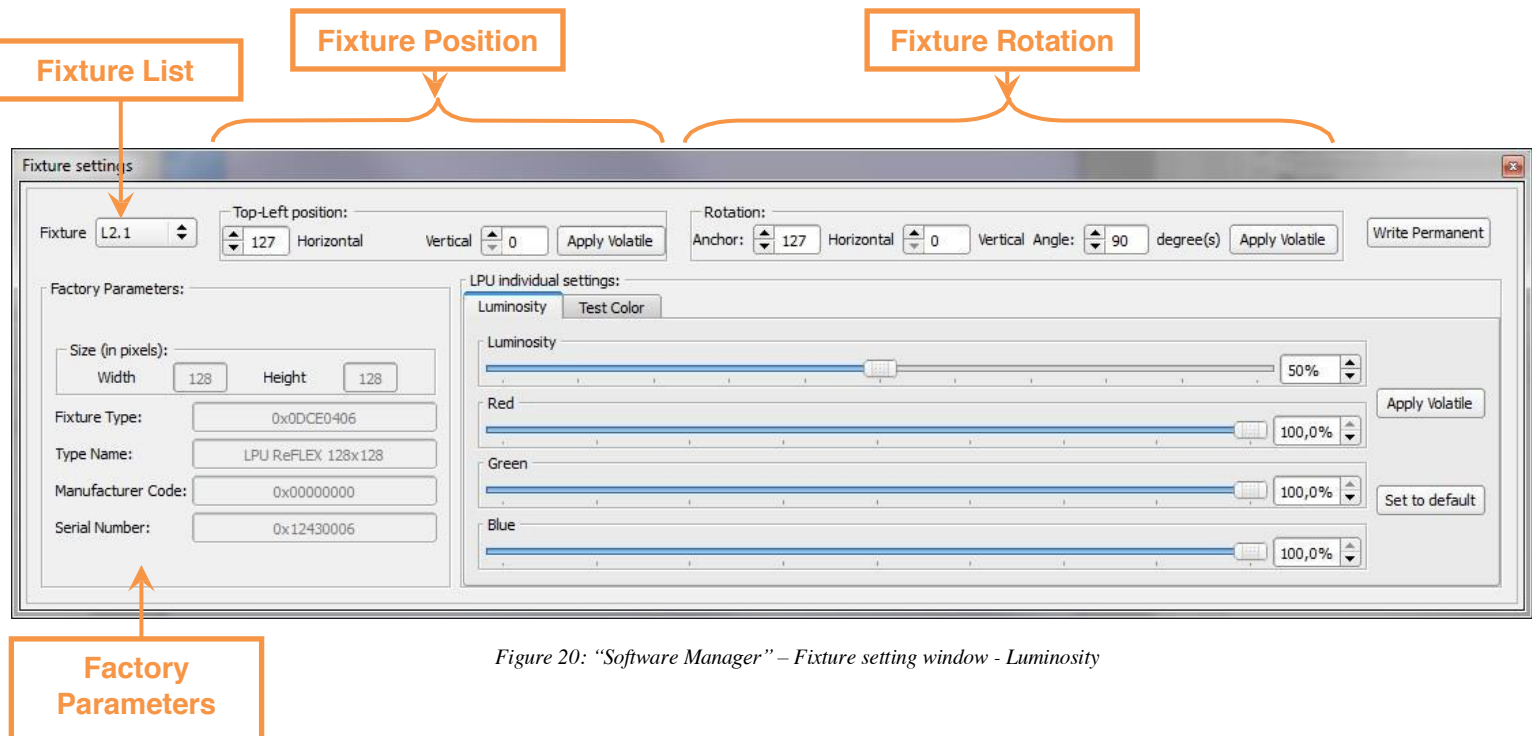


Figure 20: “Software Manager” – Fixture setting window - Luminosity

The “Fixture setting” window allows to:

- Select one fixture from the current scene in the “Fixture List”,
 - Display following factory parameters of selected fixture:
 - o Size in pixel (Width and Height),
 - o Fixture Code,
 - o Type Name,
 - o Manufacturer Code,
 - o Serial Number.
 - Display and modify the Top-Left position (horizontal and vertical) in Top-Left position area.⁽¹⁾
 - Display and modify anchor position and fixture rotation angle (from -180° to +180°).⁽¹⁾
 - Display and modify fixture’s luminosity (in Luminosity tabulation).⁽¹⁾
Luminosity can be adjusted for each color components and globally (for all components).
Default setting is 100% for all (components and global).
 - All those settings can be written in fixture’s non-volatile memory by clicking on “Write Permanent” in order to keep settings when fixture reboot
- (1) These parameters can be configured individually in volatile memory (by clicking on “Apply Volatile”) in order to test it before to be written in permanent memory (they are lost on next fixtures boot).

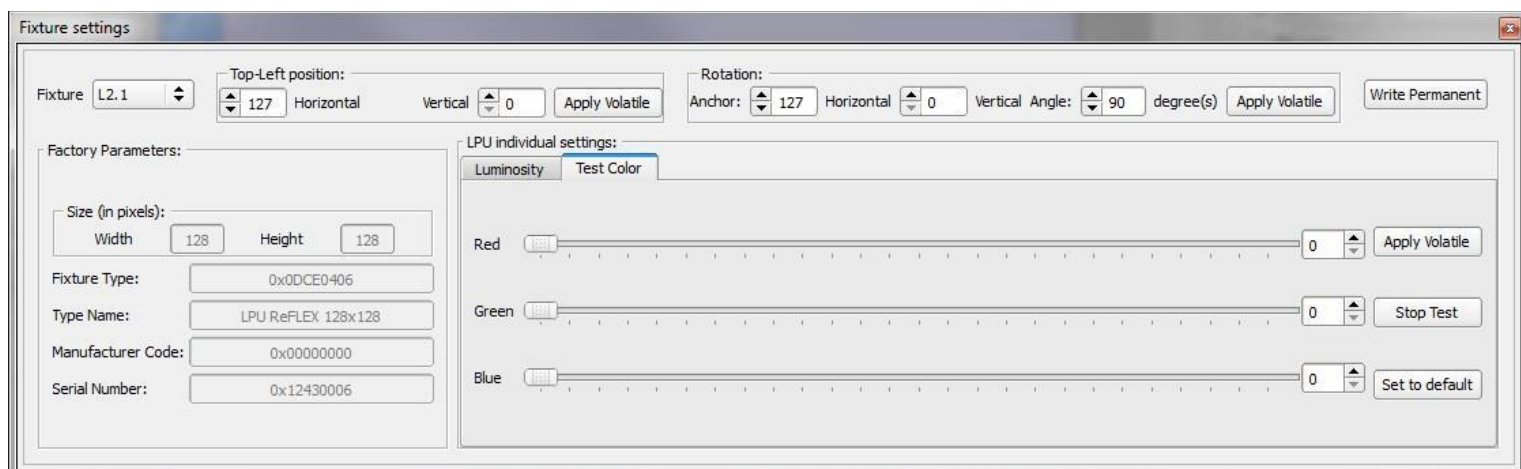


Figure 21: “Software Manager” – Fixture setting window – Test Color

The “Fixture setting” window also allows activating a test color pattern through the “Test Color” tabulation of “LPU individual settings”.

Test pattern is activated on selected fixture by:

- Selecting levels of each color components.
- Clicking on “Apply volatile” or “Set to default”. This one activates the test pattern with all components to 0 (black color).

Test pattern is deactivated on selected fixture by clicking on “Stop Test” button.

4.6.15. “Fixture Update” window

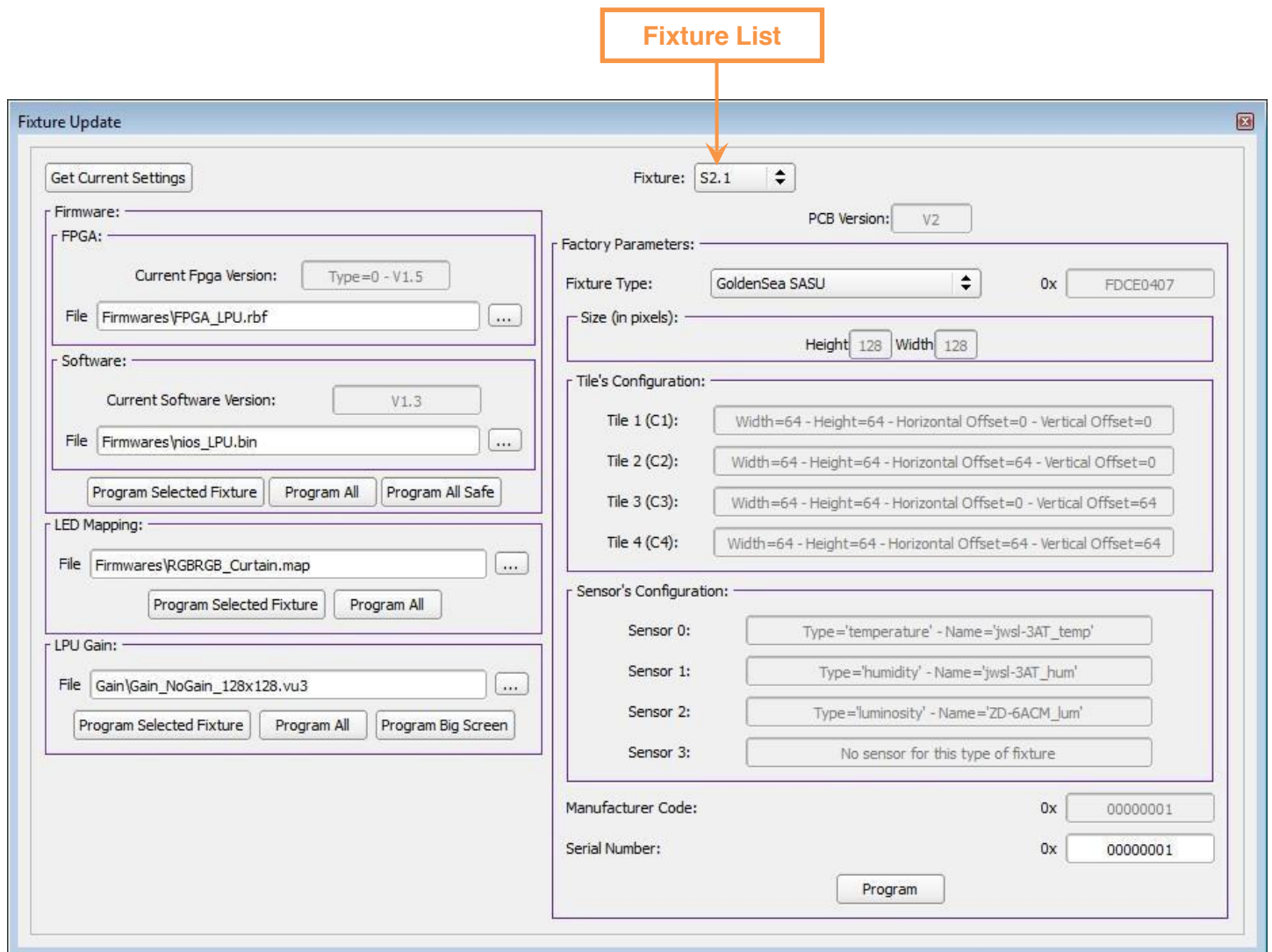


Figure 22: “Software Manager” – Fixture Update window

The “Fixture Update” window allow to update firmware and configuration of fixtures connected to the VPU.

Access to this window is protected by a password in order to restrict access to privileged users. Thus because it contains functions whose can deteriorate fixture working by updating memories with wrong parameters or firmware programs.

This window allows to:

- **Display following settings of selected fixture:**
 - FPGA Version,
 - Software Version,
 - PCB Version,
 - Fixture Type code and Name, ⁽¹⁾
 - Fixture Size (Width and Height), ⁽¹⁾
 - Manufacturer Code, ⁽¹⁾
 - Serial Number.

On “offline” mode settings can be read from fixture by clicking on “Get Current Settings” button. On offline mode, only Factory Parameters⁽¹⁾ are valid and based on configuration of current loaded project.

- **Modify Factory Parameters through “Factory Parameters” area by following actions:**

- Select fixture on “Fixture list”,
- Select fixture Type from the list of available fixtures (this area display configuration of tile’s sizes and sensors settings associated with the selected type of fixture),
- Enter Serial Number,
- Press on “Program” button.

- **Updating user Firmware through “Firmware” area:**

Allow to update user FPGA and Software firmwares of the selected fixture by following actions:

- Select fixture on “Fixture list” (Only for single fixture programming),
- Select FPGA firmware file by clicking on button and choose the “.rbf” file to program,
- Select Software firmware file by clicking on and choose the “.bin” file to program,
- Click on “Program Selected Fixture” to program selected fixture only, or on “Program All” to program all VPU detected by VPU.

Attention : before programming Firmware on **multiple fixtures**, verify than all fixtures have same type of drivers (5050 or 5042). Otherwise the fixture will not work properly with its connected LED boards.

LPU and SASU fixture s contains one Safe and one User firmware (including each one Fpga part and one Software part). If User firmware becomes corrupted, fixture starts on Safe Firmware. Only user firmware can be updated by HDMI Software Manager.

- **Updating LED Mapping through “LED Mapping” area:**

Allow to update LED Mapping according to cabling order of LEDs on drivers, by following actions:

- Select fixture on “Fixture list” (Only for single fixture programming),
- Select LED Mapping file by clicking on button and choose the “.map” file to program,
- Click on “Program Selected Fixture” to program selected fixture only, or on “Program All” to program all fixtures detected by the VPU.

- **Updating Calibration data through “LPU Gain” area:**

Allow to program the gain correction tables of one, all or on a big screen of fixtures, by following actions:

- Select fixture on “Fixture list” (Only for single fixture programming),
- Select calibration file by clicking on button and choose the file to program:
 - “.vu3”: VU3 format
 - “.eldim”: ELDIM format
 - “.radiant”: RADIANT format
- Click on :
 - “Program Selected Fixture” to program selected fixture only
 - “Program All” to program the same calibration data on all fixtures detected by the VPU.
 - “Program Big Screen” to program calibration on a group of fixture (with a calibration file covering this group)

Calibration notes:

- See chapter 7 for more calibration properties (Pixel order, calibration file formats...),
- For “Program Selected Fixture” and “Program All” methods:
 - The calibration file must contain a number of lines and rows more or equal than those of the selected fixture,
 - Pixel coordinates are the same than in chapter 7.2 => First line/first row coefficients are those of top-left pixel of fixture.

- For “Program Big Screen” method:
 - Pixel coordinates are those of the VPU HDMI output => First line/first row coefficients are those of top-left pixel of VPU HDMI output,
 - All fixtures connected to VPU will be programmed => Only the fixtures to be programmed must be connected to VPU,
 - The calibration file must contain a number of lines and rows which must encompass all fixtures connected to the VPU,
 - Fixtures must not be rotated.

4.6.16. “VPU Update” window

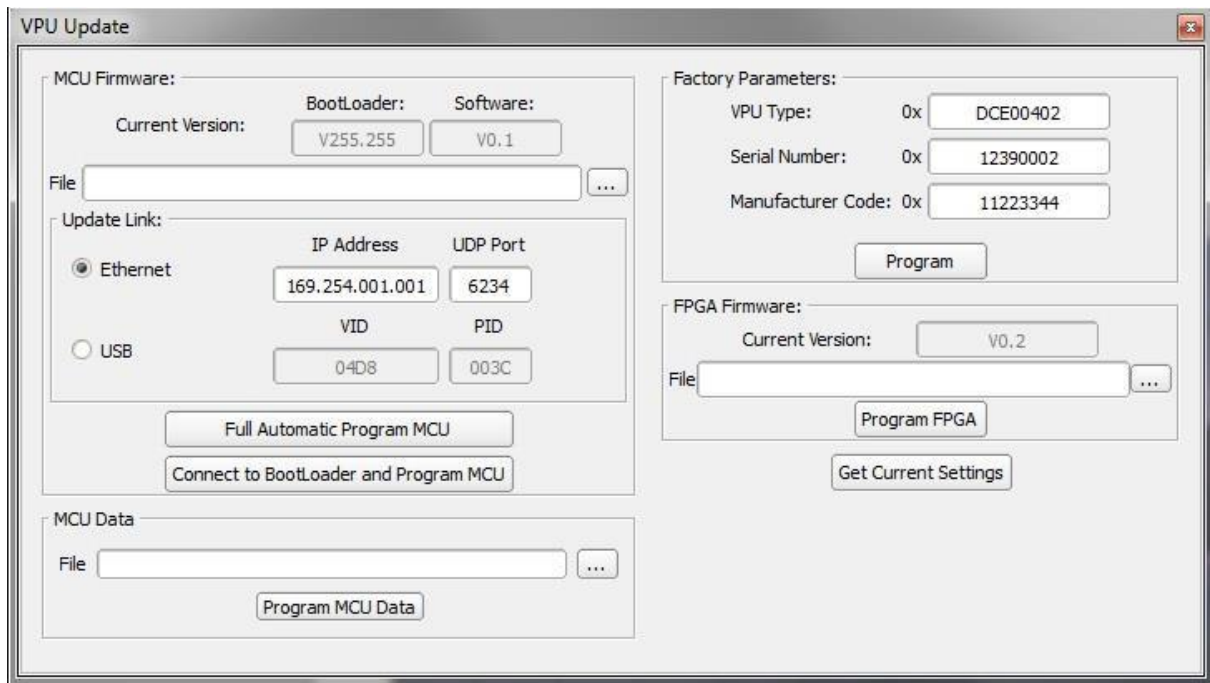


Figure 23: “Software Manager” – VPU Update window

“VPU Update” window allow updating VPU firmware and parameters.

Access to this window is protected by a password in order to restrict access to privileged users. Thus because it contains functions whose can deteriorate VPU working by updating memories with wrong parameters or firmware programs.

This window allows to:

- **Display following parameters:**
 - o FPGA Version,
 - o MCU Versions (bootloader and software),
 - o VPU Type,⁽¹⁾
 - o Fixture Type code and Name,⁽¹⁾
 - o Manufacturer Code,⁽¹⁾
 - o Serial Number.

Those data are updated by clicking on “Get Current Settings” button.


- **Modify Factory Parameters through “Factory Parameters” area by following actions:**
 - o Enter VPU Type,
 - o Enter Serial Number,
 - o Enter Manufacturer Code,
 - o Click on “Program” button to update parameters in non-volatile memory.

The “Factory Parameters” area also displays following settings of selected fixture type:

- o Tile’s configuration: Size and offset of each tile.
- o Sensor’s configuration: Type and name of each sensors channel.

- **Updating MCU Firmware through “MCU Firmware” area:**

Allow to update MCU software application through Ethernet or USB link depending on connection state of “HDMI Software Manager” by following actions:

- Select MCU software file by clicking on  button and choose the “.hex” file to program,
- Click on “Full Automatic Program MCU” to program Software on MCU already running valid software. (only available when connected to VPU) ⁽¹⁾
- Click on “Connect to BootLoader and Program MCU” to program Software on MCU only running BootLoader (only available when HDMI Software Manager is running in offline Mode when VPU is freshly programmed with the BootLoader). **This update is always performed through Ethernet Link.**

Notes:

(1) Regarding update link:

The physical link used to update MCU is automatically selected and is the same as connection mode of “HDMI Software Manager”.


- For Ethernet, the computer running “HDMI Software Manager” must be configured on the 169.254.1.X subnet. The VPU running bootloader wait commands on 169.254.1.11 IP address on port 6234.

Configure for example the computer’s Ethernet link with IP address 169.254.1.2 and subnet mask 255.255.0.0

- For USB, process can be disturbed by installation of a new driver by Windows on first update through this USB link (because BootLoader uses a different driver than Software application). If this happens, retry after VPU’s MCU reboots.

- **Updating MCU touchscreen Data through “MCU Data” area:**

Allow updating MCU touchscreen data in order to customize welcome screen, background, icons and fonts. Execute following actions:

- Select configuration file by clicking on  button and choose the data list “.lst” file to program,
- Click on “Program MCU Data” to program all data files.

4.6.17. "DMX Mapping Configuration" window

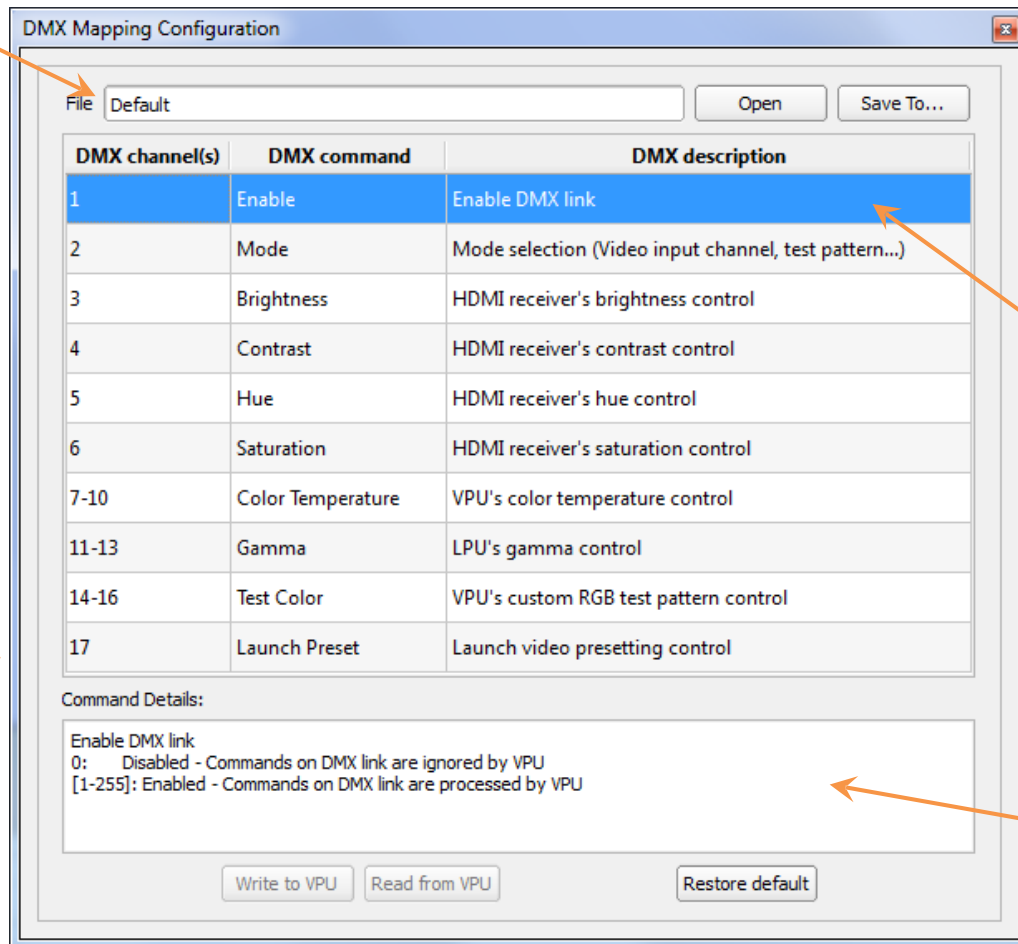


Figure 24: "Software Manager" – DMX Mapping Configuration" window

The "DMX Mapping configuration" window allows managing DMX command mapping.

4.6.17.1. DMX mapping configuration

Table on above window displays the DMX configuration* currently loaded on "HDMI Software Manager".

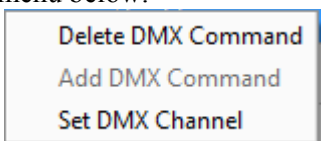
* Be careful because the DMX mapping is the same than on VPU only after an upload from VPU or a download to VPU from "HDMI Software Manager".

It displays a list with:

- Starting and Ending channel(s) of DMX command,
- DMX Command Name
- DMX Command description

More complete description of DMX Command is displayed on Command Details area when users select a table line.

DMX Mapping can be edited by right clicking on a line and selecting a function in the contextual menu below:

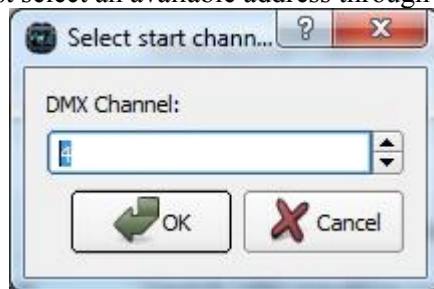


Following functions are available:

- **Delete DMX Command:** To delete currently selected DMX command from mapping
- **Add DMX Command:** To add DMX command not already present on the table. Following window appears where users must select an available command and validate clicking on OK :



Then users must select an available address through the following window:



- **Set DMX Channel:** To modify DMX channel of selected Command.

DMX Mapping can be saved to an external file by clicking on “Save To...” button and by choosing a file with “.dmx” extension.

Existing DMX Mapping can be loaded from an external “.dmx” file clicking on “Open”.

Default DMX configuration can be restored by clicking on “Restore Default” button.

4.6.17.2. Manage “DMX Presetting”

DMX presetting allows saving or restoring, to or from VPU’s non-volatile memory, the DMX mapping of the VPU.

8 customs and one default DMX presetting are available in the VPU’s non-volatile memory.

The 8 customs presetting can be read/written by “Software manager” or launched through VPU’s LCD screen.

The default DMX presetting is launched when VPU software starts.

The following “DMX Presetting” area allows to write and read DMX presettings to or from VPU’s non-volatile memory.



Figure 25: “Software Manager” – DMX Preset area of DMX mapping configuration window

// To write DMX setting to VPU:

- Click on “Write” button.
The following window appears:

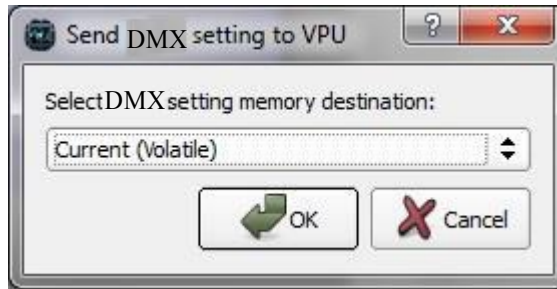


Figure 26: “Software Manager” – Write DMX Preset window

- Select VPU memory to write with current DMX settings of software manager in the list below:

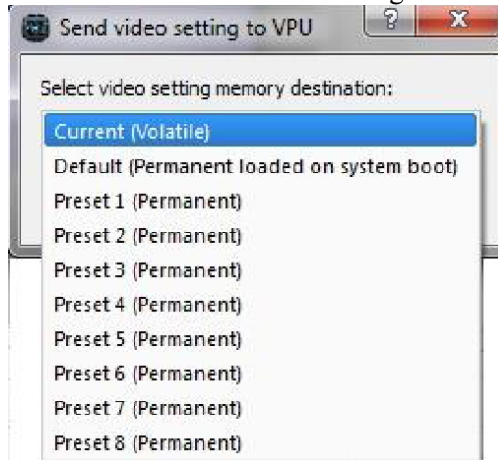


Figure 27: “Software Manager” – Write DMX Preset list window

The current choice allows modifying all current DMX settings of VPU in volatile.

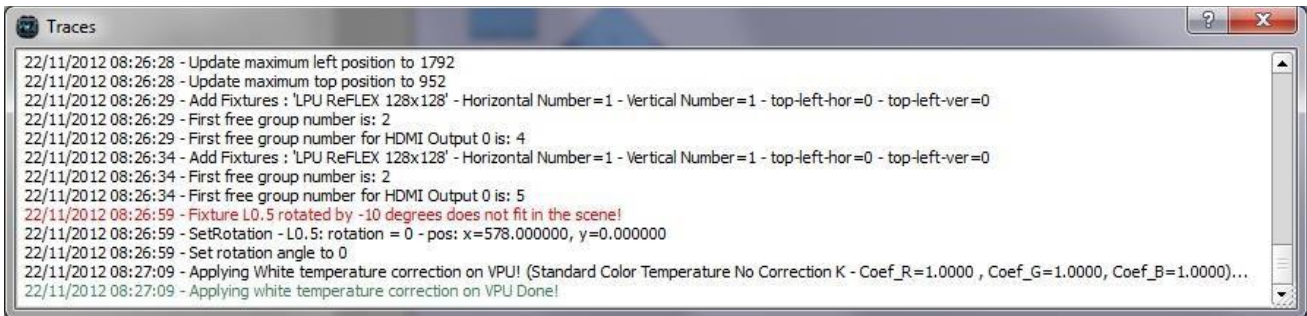
- Click on “Write” button to send DMX settings.

2/ To read DMX setting from VPU:

- Click on “Read from VPU” button. (figure : “Software Manager” – DMX Preset area of DMX mapping configuration window)
A window similar to “Software Manager” – Write DMX Preset window” appears.
- Select VPU memory to read from the list,
- Click on “Read” button to read DMX settings.

DMX settings are read from selected VPU memory and DMX mapping is updated on HDMI Software Manager.

4.6.18. Traces for debug purposes



```
Traces
22/11/2012 08:26:28 - Update maximum left position to 1792
22/11/2012 08:26:28 - Update maximum top position to 952
22/11/2012 08:26:29 - Add Fixtures : 'LPU ReFLEX 128x128' - Horizontal Number=1 - Vertical Number=1 - top-left-hor=0 - top-left-ver=0
22/11/2012 08:26:29 - First free group number is: 2
22/11/2012 08:26:29 - First free group number for HDMI Output 0 is: 4
22/11/2012 08:26:34 - Add Fixtures : 'LPU ReFLEX 128x128' - Horizontal Number=1 - Vertical Number=1 - top-left-hor=0 - top-left-ver=0
22/11/2012 08:26:34 - First free group number is: 2
22/11/2012 08:26:34 - First free group number for HDMI Output 0 is: 5
22/11/2012 08:26:59 - Fixture L0.5 rotated by -10 degrees does not fit in the scene!
22/11/2012 08:26:59 - SetRotation - L0.5: rotation = 0 - pos: x=578.000000, y=0.000000
22/11/2012 08:26:59 - Set rotation angle to 0
22/11/2012 08:27:09 - Applying White temperature correction on VPU! (Standard Color Temperature No Correction K - Coef_R=1.0000 , Coef_G=1.0000, Coef_B=1.0000)...
22/11/2012 08:27:09 - Applying white temperature correction on VPU Done!
```

The “Software Manager” is able to generate debug traces in a dedicated window and to save the traces in a log file. **Traces are only valid in English for debugging purposes by designers.**

Other language generates characters not well displayed on trace window and not written correctly on log files.

The trace window is an independent panel which displays timestamped lines. The text browser control of this window is cleared when the line number exceed 3000 lines.

This trace generation is configurable via the main software configuration file “SoftwareManager.xml”, allowing to:

- Activate/deactivate (default) trace generation,
- Activate/deactivate log file generation,
- Select maximum log file size (default: 1MB).


Log files are named “SoftMngr_YYYYMMDD_hhmmss_idx.log” and generated in the “Traces” sub-directory, with:

- YYYY: Year when “SoftwareManager” starts,
- MM: Month when “SoftwareManager” starts,
- DD: Day when “SoftwareManager” starts,
- hh: Hour when “SoftwareManager” starts,
- mm: Minute when “SoftwareManager” starts,
- ss: Second when “SoftwareManager” starts,
- idx: Log file index (starts at 0 and incremented when the file exceed the file size limit).

2. Uses cases

2.1. General instructions

Below are some general user instructions useful to control HDMI MEDIA SYSTEM:

- In order to be able to control all fixtures connected to VPU through HDMI Software Manager, a reset sequence should be executed by clicking on the  icon in the tool bar, each time one of the following condition appear *:
 - o On system startup after all fixtures have been powered on,
 - o If fixtures are added or removed,
 - o If cabling order have been modified.

* This is not necessary for existing screen, when it is not requires to be controlled by HDMI Software Manager.

2.2. Create new scene offline

When users doesn't have a scene (composed of one or several fixtures), it can create is scene offline (only with a computer running "HDMI Software Manager") and then go later to the scene location to configure it.

Prerequisites:

Users must know:

- o Number of Fixtures connected to the VPU,
- o Fixtures type,
- o Cabling sequence.

Thus because before configuring fixtures, "HDMI Software Manager" verify than fixtures configuration on project is the same than whose detected by VPU (same number of fixtures, types and cabling sequence).

Users must do following actions:

- Open "HDMI Software Manager",
- Create New Project or open an existing one,
- Add fixtures to scene with "Paintbrush" tools (single or grouped),
- Position fixtures on scene (offset and rotation) (either by moving with mouse on scene area or through "Fixture setting" and "Group setting" windows)
- Configure fixture cabling sequence or the 4 VPU HDMI outputs,
- Configure fixture luminosity (Optional),
- Configure video settings by selecting video input and scaling configuration (Optional),
- Configure color corrections (Optional),
- Save project.

2.3. Configuring scene

2.3.1. With existing project


Objective

Configure an existing scene composed of one VPU and fixture(s) daisy-chained to its HDMI Outputs with an existing project.

Prerequisites:

HDMI Software Manager requires that project is composed of exactly the same fixture number, fixture types and cabling sequence of fixtures than on the existing physical scene.

Procedure:




- Open “HDMI Software Manager” on online mode,
- Open existing project,
- Download configuration to VPU by clicking on  icon on tool bar,
- Wait end of configuration.

2.3.2. By modifying existing scene without project

Objective:

Configure an existing scene composed of one VPU and fixture(s) daisy-chained to its HDMI Outputs by connecting to VPU and uploading its configuration to HDMI Software Manager.

Procedure:

- Open “HDMI Software Manager” on online mode,
- Execute a reset sequence in order to be sure that VPU detects all fixtures by clicking on  icon,
- Upload configuration from VPU by clicking on  icon on tool bar,
- All current VPU and fixtures settings are loaded on current project,
- Modify settings on HDMI Software Manager through its different windows described in previous chapters,
- Download configuration to VPU by clicking on  icon on tool bar (Optional),
- Save project (Optional).

3. VPU Control from the LCD touchscreen

This chapter presents the available functionalities on the VPU's touchscreen.

3.1. Startup screen

When VPU starts, it displays a start-up screen (Company logo for example).

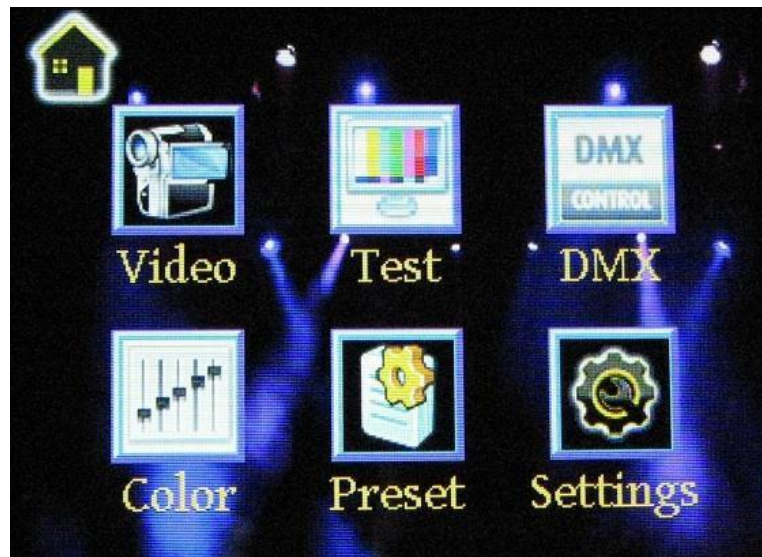
When the start-up sequence is finished and the VPU is ready to receive commands from a remote PC or LCD touchscreen, the Language selection screen is displayed on the LCD.

3.2. Language selection

The following screen allows selecting the language for the LCD touchscreen.

3.3. Main Menu

The following picture shows the main menu selection



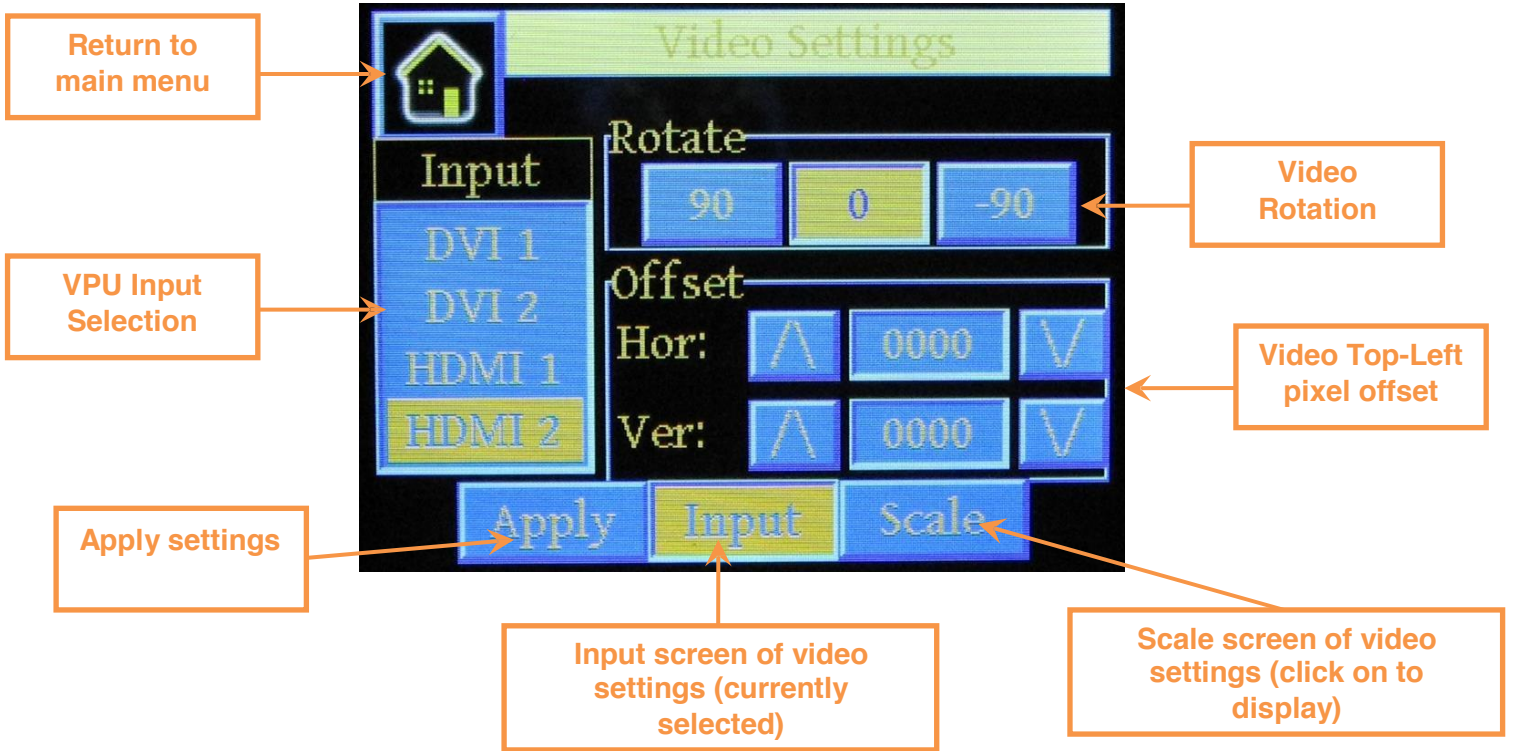
It allows selecting one of the following menu by pressing on its icon:

- **Video:** Allow to select video input and its scaling
- **Test:** Allow to activate test pattern and functions
- **DMX:** Allow to display current DMX configuration
- **Color:** Allow to setup color corrections
- **Preset:** Allow to load or save pre-settings
- **Settings:** Allow to configure Ethernet port configuration
- **Home Icon:** Allow to return to language selection screen

3.4. Video Menu

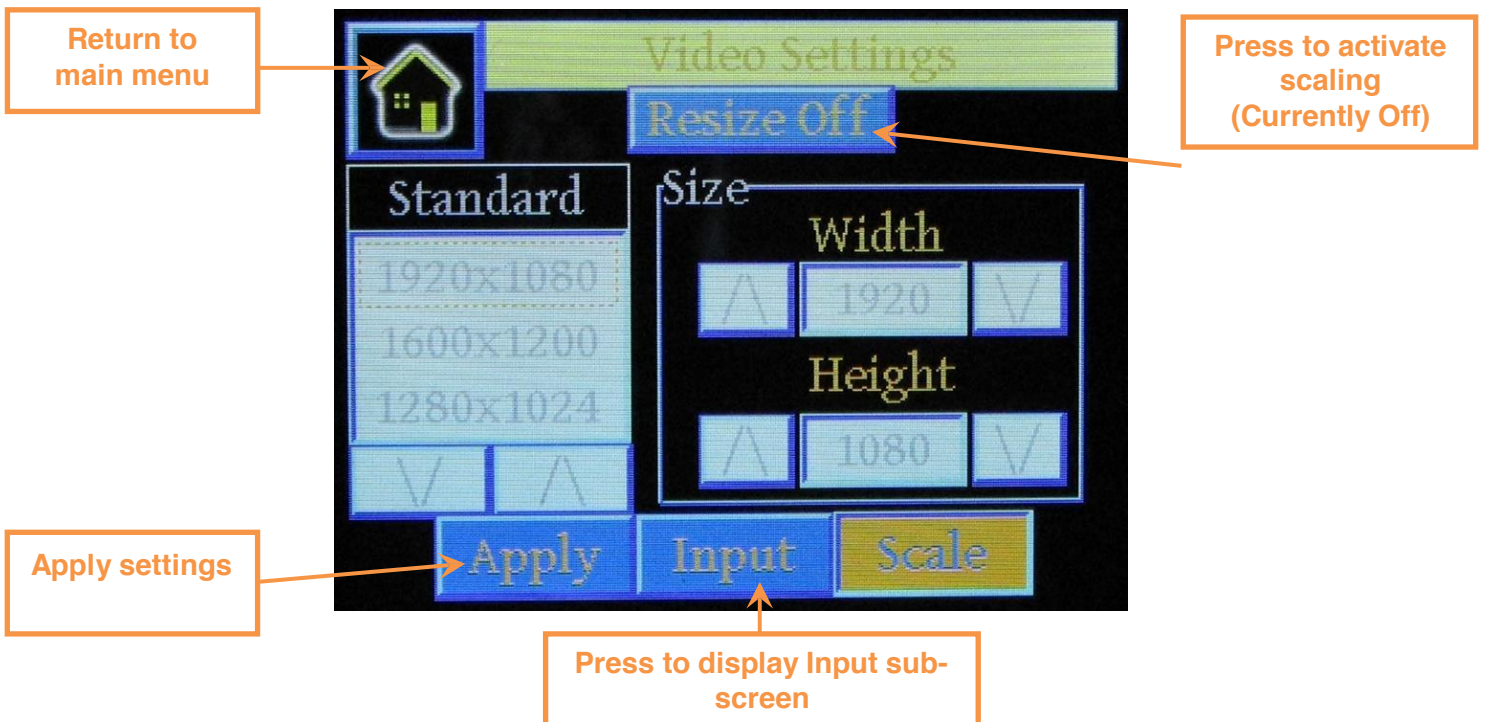
3.4.1. Video Settings (1/2) – Input

The following picture shows the Video Settings screen (1/2) allowing to select VPU input, rotation and top-left pixel offset:

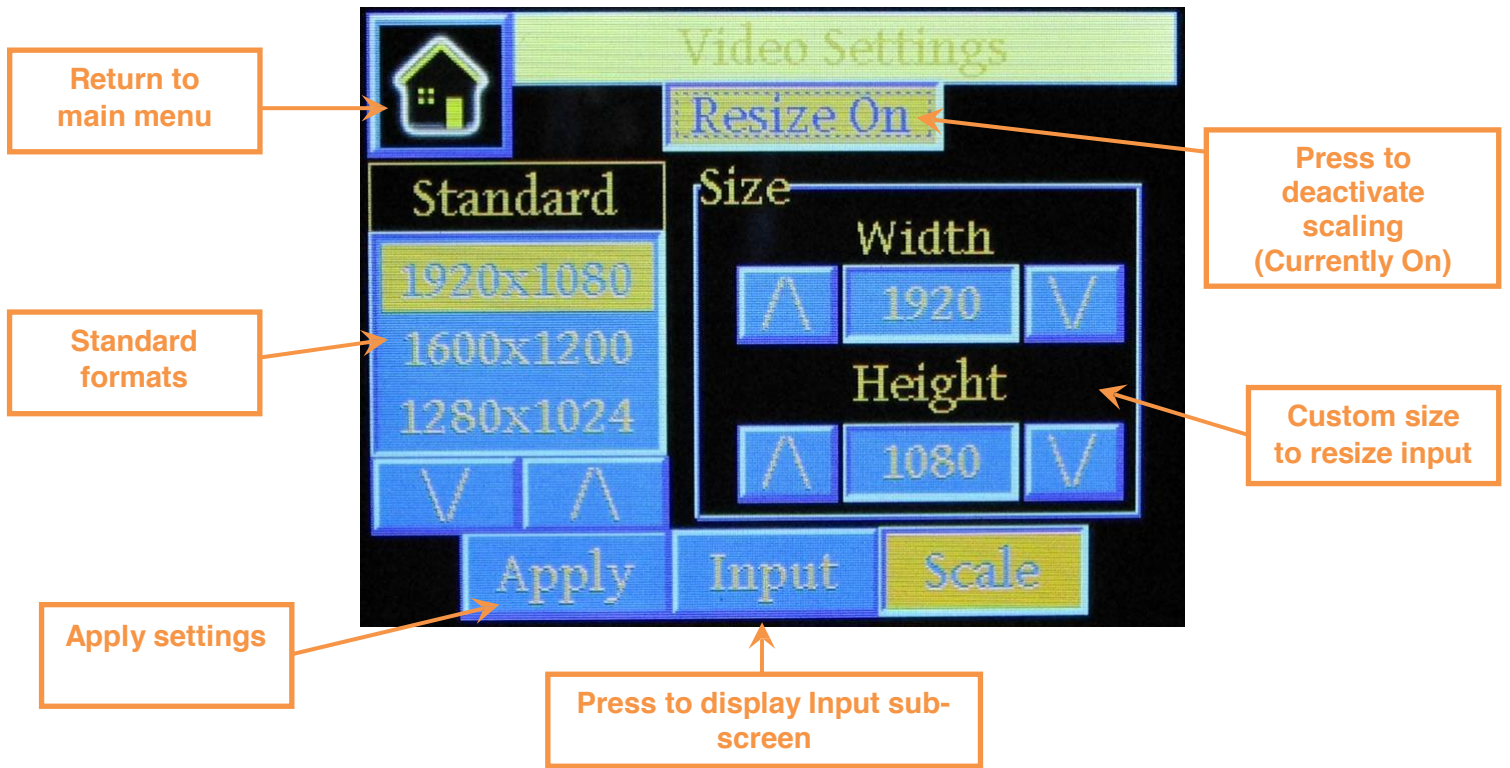


3.4.2. Video Settings (2/2) – Scale

The following picture shows the Video Settings screen (2/2) allowing configuring scaling of current video selected:



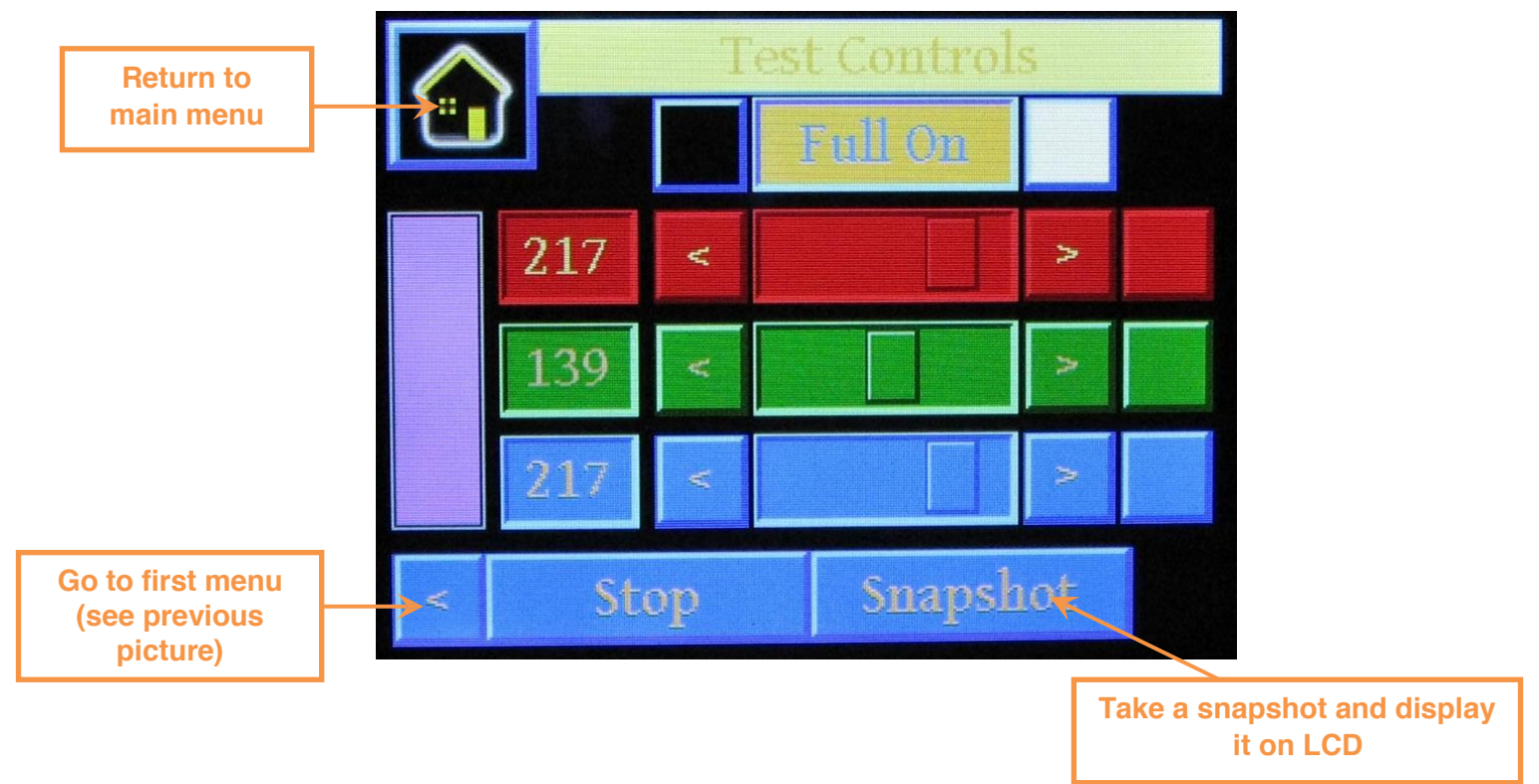
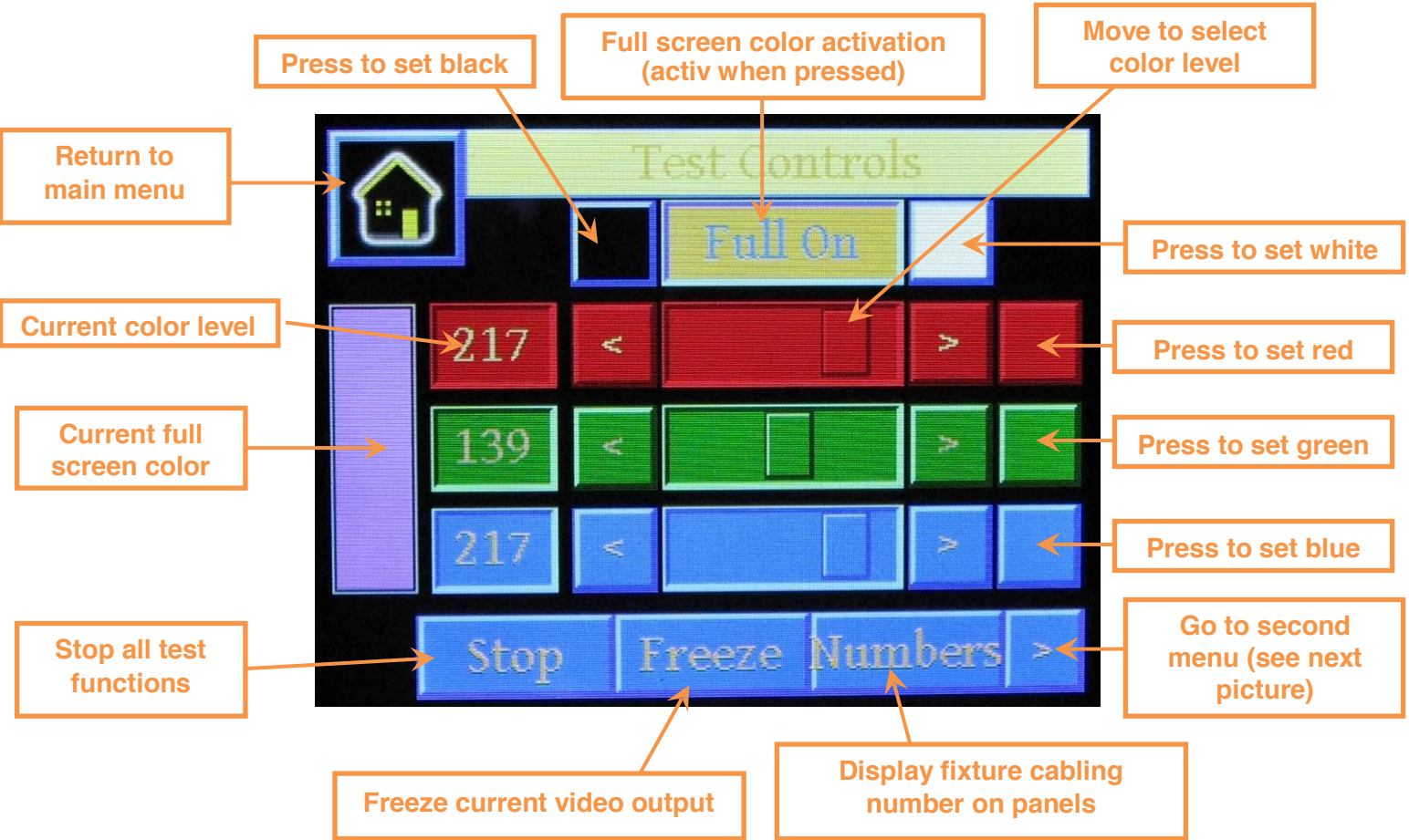
Following screen is displayed when Scaling is activated:



Note: When selecting standard format, Width and height fields of Size area are refreshed with values of it. If user modifies these values by pressing on up and down button, this is this value that will be used instead of standard format selected.

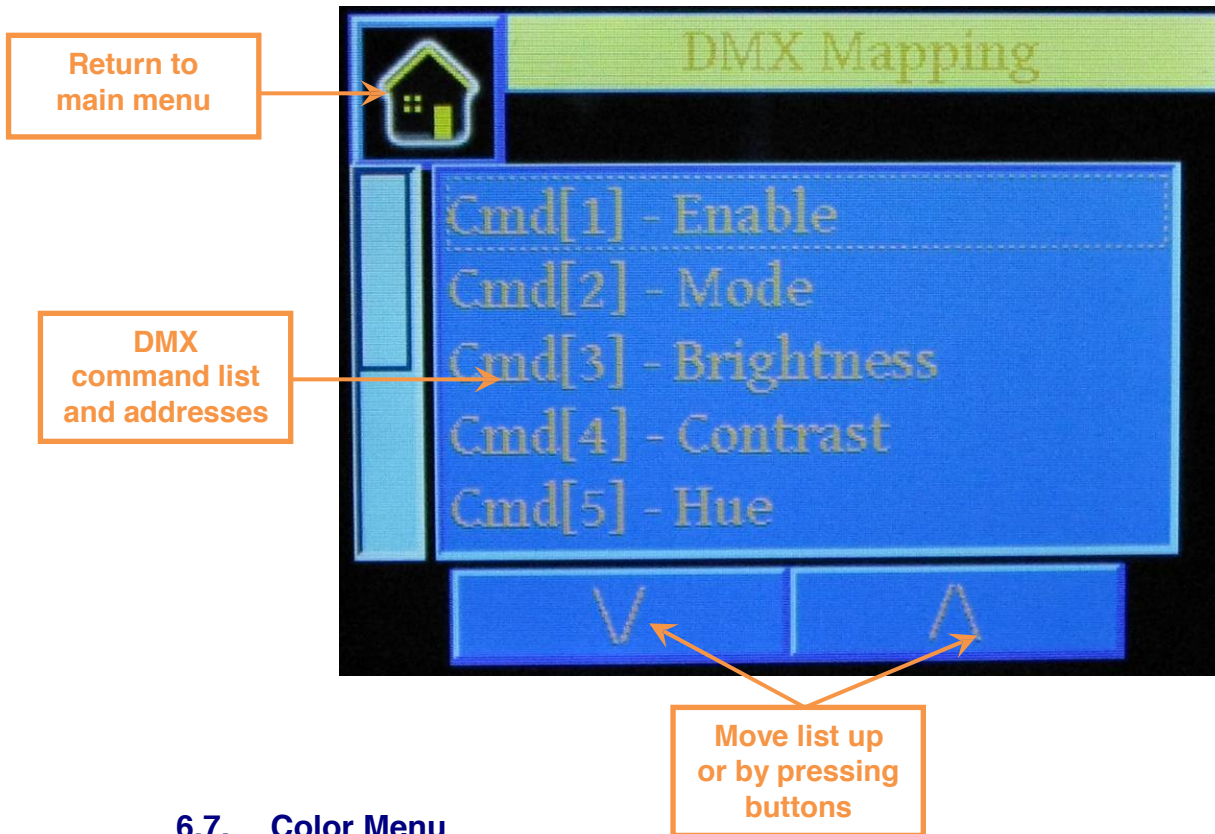
3.5. Test Menu

The following picture shows the Test screen allowing to activate/deactivate test patterns and functions:



3.6. DMX Mapping Menu

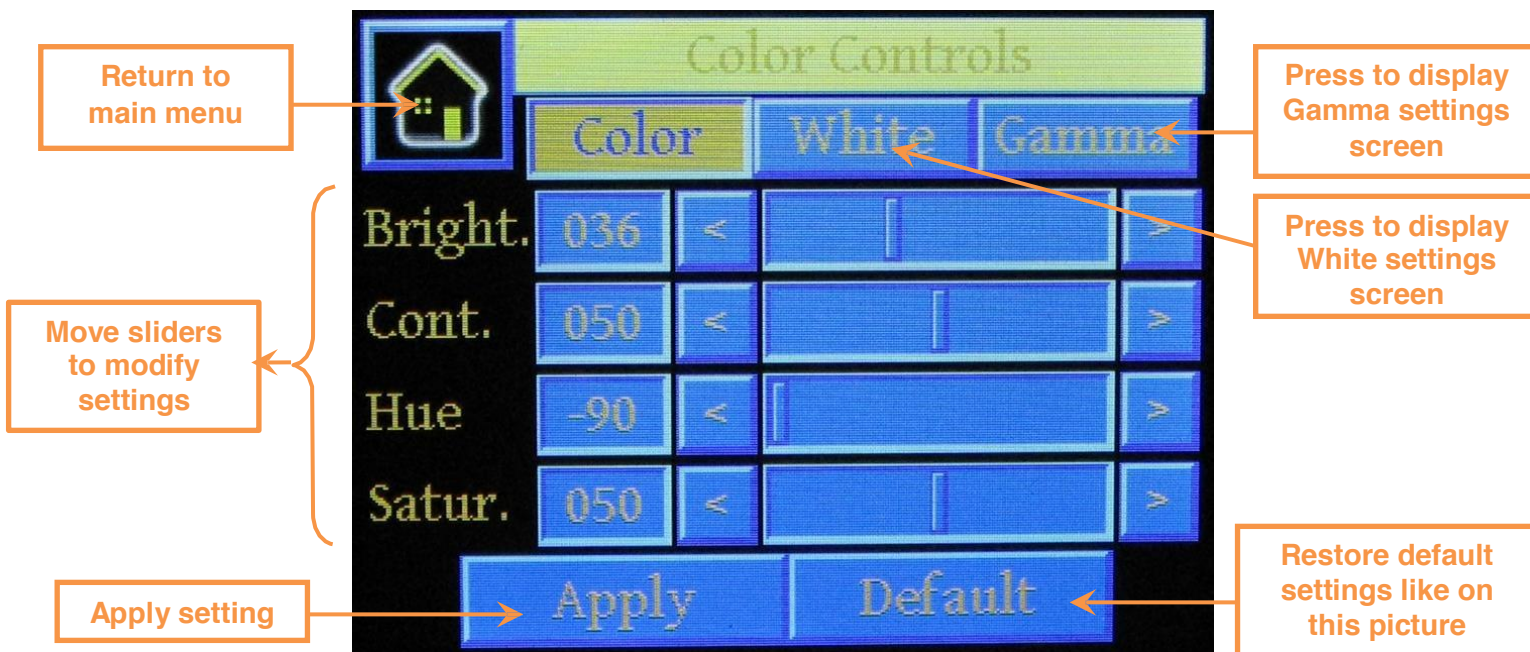
The following picture shows the DMX mapping screen displaying current DMX command mapping:



6.7. Color Menu

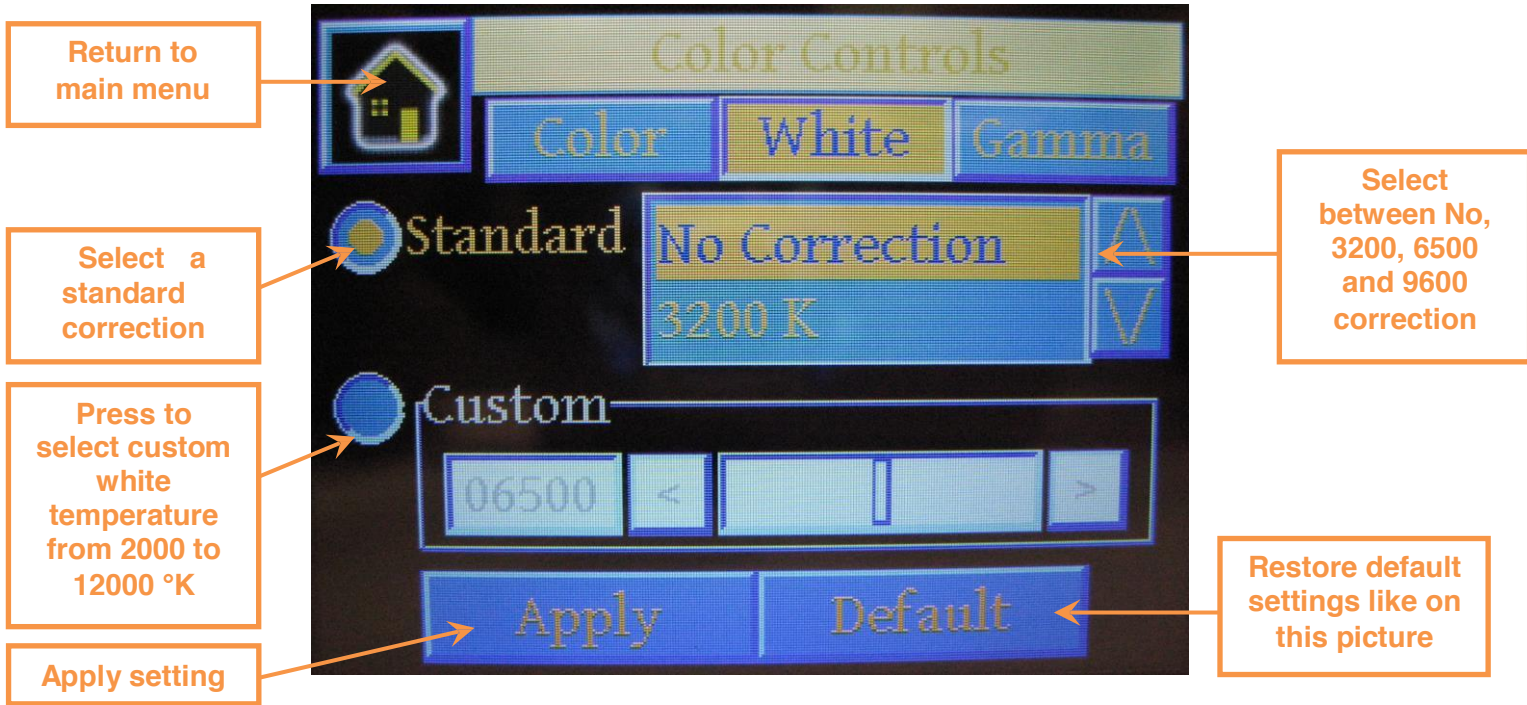
6.7.1. Color Controls 1/3 - Global color correction

The following picture shows the Color Controls screen (1/3) allowing to configure global video settings (applied on video input):



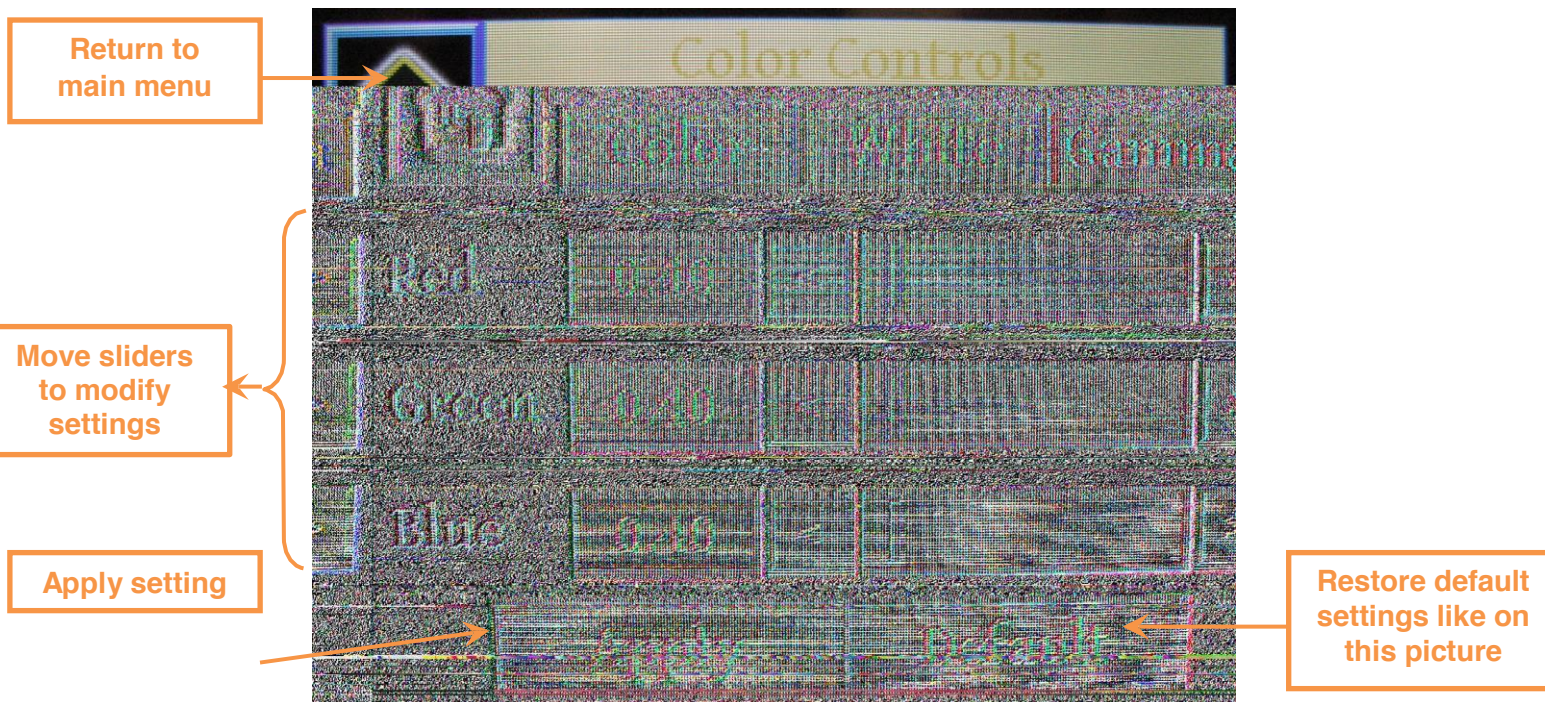
6.7.1. Color Controls 2/3 – White Temperature

The following picture shows the Color Controls screen (2/3) allowing to configure white color correction:



6.7.1. Color Controls 3/3 – Gamma

The following picture shows the Color Controls screen (2/3) allowing to configure Gamma correction:



6.8. Presetting Menu

The following screen allows loading DMX or Video setting from nonvolatile memory of VPU to be used as current DMX or Video setting or to save current VPU setting to nonvolatile memory:



6.9. Settings Menu

The following screen show the settings screen allowing to configure the Ethernet port of VPU:

